



REURBANATION

Ralph Jensen May 2013 URB8 MSc 04A & DAAU

This project takes its starting point in the plan of the Municipality of Aalborg for the southern part of Aalborg inner city. The area is undergoing the development of changing from a former industrial area to an inner city environment. Currently the majority of this area is under construction although one spot around Hjulmagervej, has still to be planned. This place is experienced almost like an island of industrial buildings in the inner city.

In this project I propose a concept, based on gradual urban renewal. The area is going to change from industrial area to an inner city environment, featuring functions as commerce, office space and residential. With the change of the functions follows a change of the outdoor spaces as well.

REURBANATION

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This report is a result of the master thesis of the MSc Urban Design, Architecture & Design, Aalborg University. The project concerns a redesign of an urban space in Aalborg, that is transformed from an industrial environment to end up with an inner city environment.

The report consist of the following five main parts:

1. Presentation
2. Analysis
3. Concept
4. Studies
5. Design Aspects

The presentation contains of a visual representation of the site which consists of visualizations, plans and sections. After the presentation comes the analysis, which leads to the concept. Hereafter comes the studies, that dwelve into the design aspects, and explains some of the thoughts behind the design.

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Site, the site

Whenever *site* or *the site* is used it refers to the project site, which is the area this report assignment is taking through a development.



III. 01 Østreå runs through the site

The site is located in Aalborg City in the northern part of Denmark, see ill. 02. Aalborg is the largest city in Northern Jutland and the fourth largest city in Denmark.

In Aalborg the streets Dannebrogsgade, Kong Christians Alle and Østre Alle, all form the orbital roads of the inner city of Aalborg, see ill. 03. wedged between these streets is the site, which mostly consists of industrial functions. Within the circumference of the orbital streets there are a few areas like this, but the site is the only spot left, which is yet to be planned for or already under construction.

The site is surrounded by Sønderbro, Østre Alle, and Godsbanen, the old railroad area, see ill. 04. Here the site is left like an isolated industrial island in the city - without any relation the rest of the it. On the site runs the street Hjulmagervej, which is connected to Sønderbro and this is the main entrance to the site if arriving by car.



Ill. 02 Location in Denmark



Ill. 03 Location in Aalborg





PRESENTATION
PRESENTATION
PRESENTATION
PRESENTATION



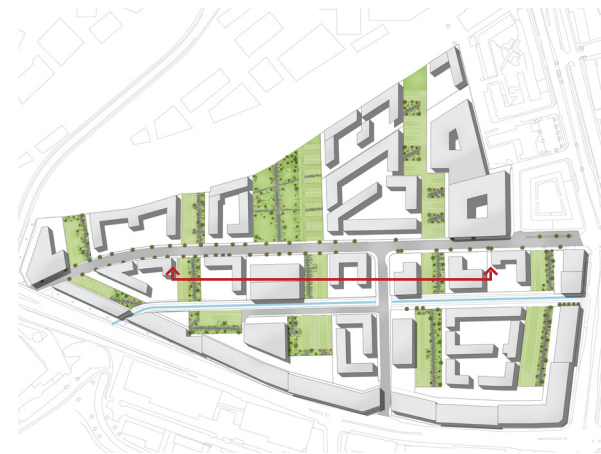
MASTER PLAN



III. P01 Master plan 1:5,000

The master plan shows how the site could appear, after the final development of the site. Since the buildings should be developed and designed by an investor and an architect, this is just an example of what the site could look like.

The site is a part of the inner city, but not a part of the city centre. This is obvious in the large spaces between the buildings and with a plot ratio at only 80.



III. P02 Cross section of the site, 1:1,000



III. P03 Perspective of the site

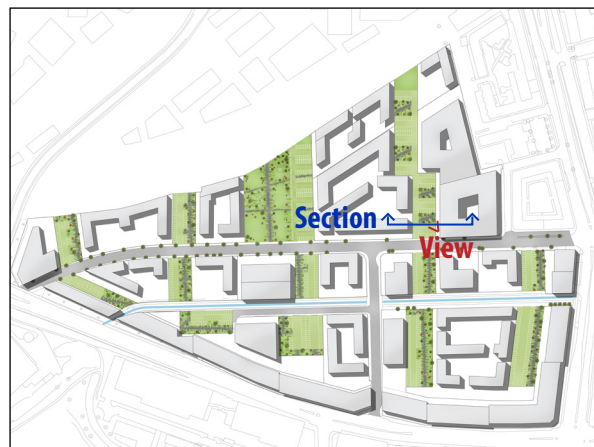
PLAN SECTIONS



III. P04 Plan section of the site, 1:1,000

In between the buildings, there are green areas. The green areas are for car parking and recreational stays. The spots for recreational stays appears as small green areas. Those small green areas should appeal to small groups or the individual user of the site. The users of the office and commercial buildings, can go here to eat their lunch or get some fresh air and the people living at the site can go here in their spare time to relax for a short time, read a book or what ever they feel like.

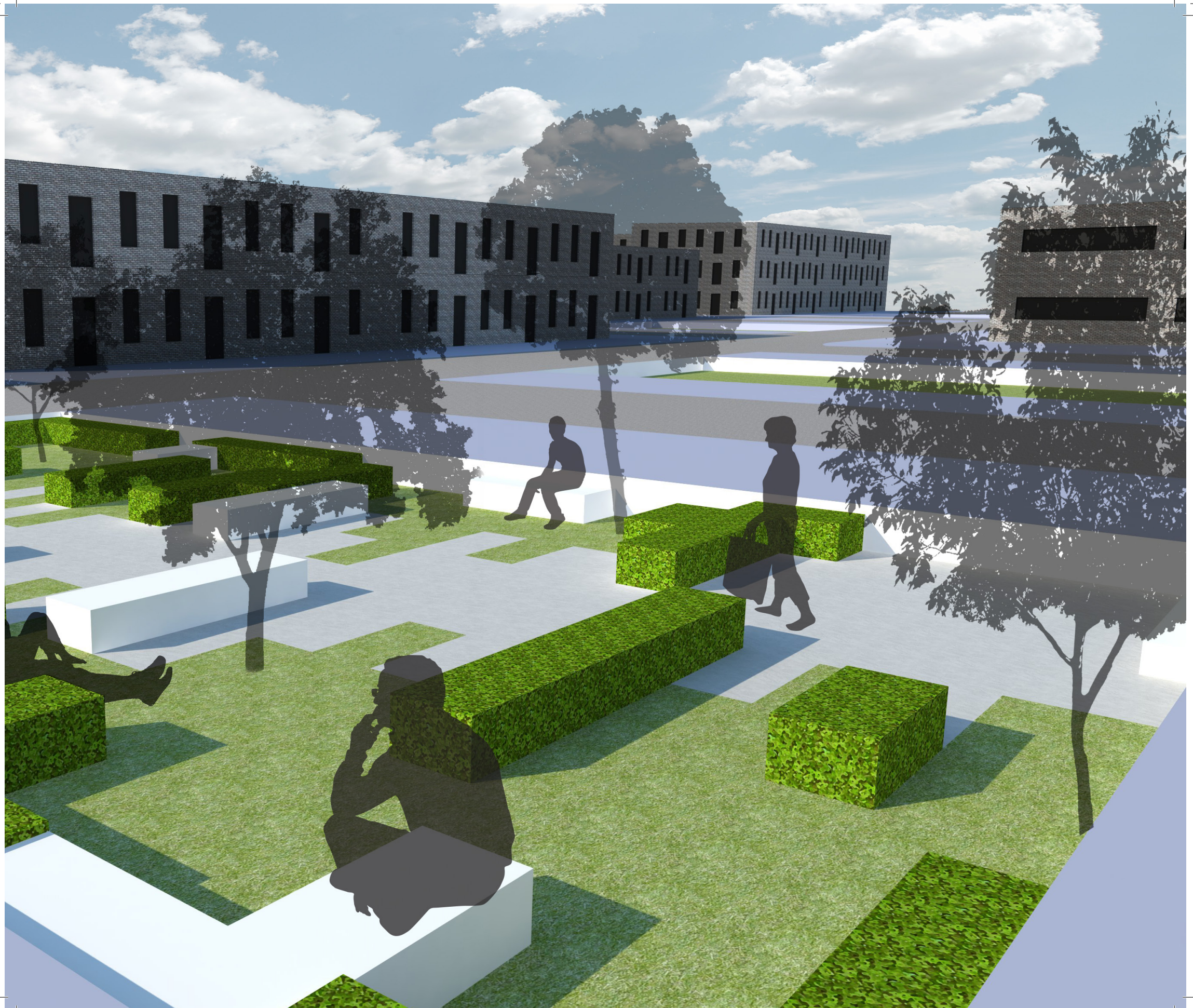
Even though the residential buildings form a private space the user might chose to go to the those green areas. The green recreational areas are divided into small pockets, with privacy and not exposed to the surrounding buildings.



III. P05 Cross section - recreational areas, 1:500



III. P06 Use of the recreational areas



Vegetation

The idea is to use different kind of vegetation. The vegetation helps create optimal sun and shade conditions and reduces the wind during the summer period. During the fall and spring, when outdoor spaces do not see that much use, the vegetations has a different expression and appears colourful, see ill. P07.

Lighting

To give the users a safe feeling during the night, the green areas should be lighted up with spot lights, lessening the risk of vandalism of the recreational areas, as mentioned in the chapter City Space Design (see page 46). By doing this, the recreational areas appears as a visible park during the night, see ill. P08.

Pavement

The car parking should have a green character, in order to keep the green link through the site. By using concrete tiles that do not cover the surface entirely, vegetation is allowed to grow in between the tiles, see ill. P09. By using this material, the speed of vehicles is slowed down in order to make the site a safer place.



Barnett argues that benches should be added in a recreational space, see the chapter City Space Design (page 43). Furthermore he states that they must be long enough to make people sit down, even if there is stranger sitting there already. However this small green recreational areas are designed for small groups or the individual person and the seating should be designed like this. Therefore the benches will be in different sizes - for the individual person and small groups who seek for privacy, see ill. P10. Since the small green recreational areas are lowered the user should be able to see the entrances and have a clear overview of the place to make the user feel safe.



III. P10 Seating at the Australian Garden



ANALYSIS



Today Hjulmagervej appears as an industrial area. You do find a small residential area just outside the site, but aside from that, it consists primarily of industrial buildings. This is not only apparent in the buildings, but also in the vehicles that frequent the area, see ill. A01.

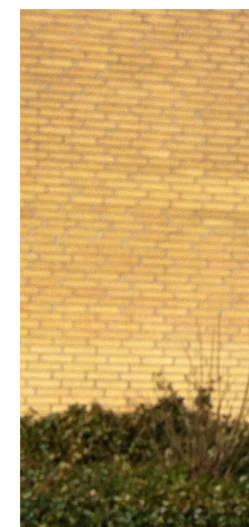
On the site you will also find derelict buildings. This is clearly shown in their state, a few of the buildings are very worn down and have parts that have collapsed. Furthermore a lot of the empty buildings are painted with graffiti – a tendency that has spread to some of the functional buildings. Most of the architecture in the area are two storeys tall with very few exceptions.

Hjulmagervej is the main road through the area and along the road there is a lot of vegetation. The trees and bushes appears as a contrast to the buildings and industrial area is not the first that comes to mind when you look down the road.

From the west to the east a small stream named Østerå runs through the site. It comes from the south and has had its course diverted to run through the area, and out into the Limfjord through pipelines. The buildings along the stream seems to “ignore” it either by having walls and fences or by having none or very few windows facing the stream. It flows through the area not being acknowledged by the architecture. There is a path along the stream where it is very quiet and peaceful, but is rarely used by more than a handful of people. The stream is an even larger contrast to the buildings than the greenery along the road.

As mentioned, just outside the site, runs two large streets Sønderbro and Østre Allé, that mainly serves as a through fare between destinations. The amount of vehicles that passes through every day, generates a lot of noise.

North of the site you will find Godsbanen, a railroad area. The project site and Godsbanen are two individual areas with no connection between each other. The site is oriented away from Godsbanen and it seems like it is “turning its back to it”.



III. A01 Impressions from the site





The municipality of Aalborg think of the site as a part of the inner city of Aalborg. There is a an overall plan for the area including the site called Håndværkerkvarteret (which means craftsman's quarter), but no specific plan. The overall plan by the municipality is gradual urban renewal. This means a gradual change from an industrial area to an environmentally friendly and green neighbourhood with all of the functions and comforts befitting an inner city area and a special emphasis on improving the urban space with greenery .

As a part of the urban renewal the site should make use of the two large through fares Sønderbro and Østre Allé. With the huge amount of traffic passing through every day, the roads could be used for branding. The exposed placement gives you this opportunity. Furthermore the buildings should have a higher architectural quality to beautify the area and improve the urban experience as you pass by.

Buildings taller than three storeys are unusual at the site, a tradition that is to be

continued with the urban renewal plan.

Håndværkerkvarteret should serve as a link between Godsbanen and Eternitten. The intent is to continue the link all the way downtown and be furnished with recreational facilities. Presently Håndværkerkvarteret has a green profile abundant with vegetation and a stream, both elements that should be preserved.

The structures along the stream should pay attention to the waterway and make it more integral to the rest of area causing it to be more inviting and open.

According to *Hovedstruktur 2005*, Håndværkerkvarteret is selected as a green and architectural focus area.

The development of Håndværkerkvarteret is expected to be done in stages over a numbers of years.



III. A02 Graffiti on the buildings

GODSBANEN

North of the project site is Godsbanen. Godsbanen is a former rail road area currently under construction even though the planning of the area has yet to be finished. Most of the functions are already decided and in the buildings are going to be: residence, student housing and various educational institutes and facilities.

Next to the buildings is a large public park. Godsbaneparken is planned to be located between the new buildings and the site. The park includes a tennis court, a basket court and a football field. Furthermore there will be rain water basins and a recreational area where Østerå will be running through. Because of the many sports facilities the idea is to attract a younger audience and physically active people[pdf 1].

ETERNITTEN

South-east of the site is Eternitten, a former industrial area which is partly under construction and partly in use. The area is going to consist of 1,400 new apartments, 670 student housings, 500m2 of shops and 50,000m2 of offices including residents for deaf people, a Fitness World and a few supermarkets. For the users of the area several outdoor areas are planned, many of which will have a green profile. The plot ratio will vary from 30-100 depending on the functions of the buildings [pdf 2].

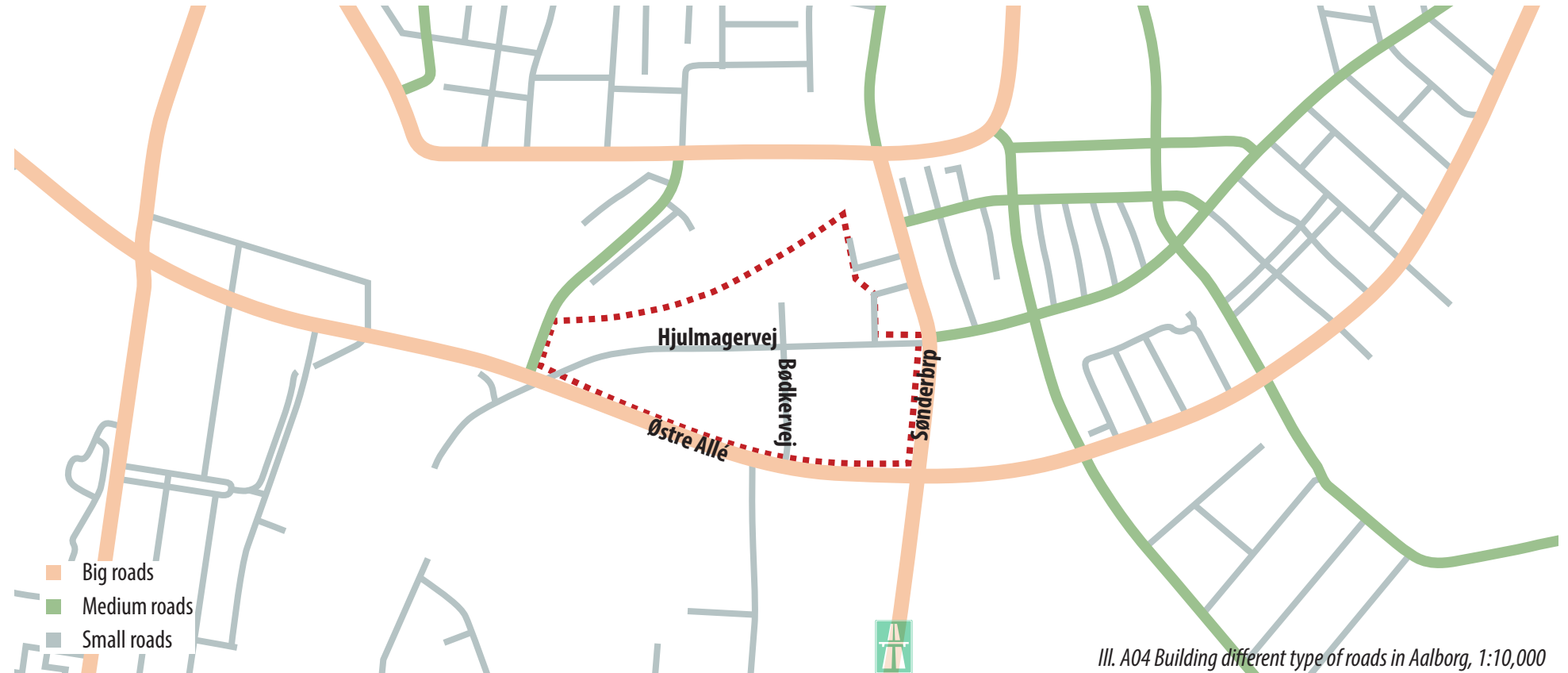


III. A03 Godsbanen & Eternitten, 1:10,000

As mentioned, the two large streets Østre Allé and Sønderbro are located next to the site. Østre Allé connects the western part of Aalborg with the city district of Vejgaard. The eastern part of Aalborg and Sønderbro connects the city centre of Aalborg with highway E45. Both of the streets have two car lanes and a bicycle lane in each direction, due to their functions as highly used throughfares. From here you meet the inner city of Aalborg, when you arrive by car from the highway.

The site has no significant relation to the areas east and south of the it. Sønderbro and Østre Allé act as two large barriers that cut the site off to the east and the south.

Hjulgagervej, which is the main street at the site, runs from Sønderbro, through the site and beneath Østre Allé. Hjulgagervej is the main entrance accessible by car and connects the site with the rest of Aalborg. Furthermore Hjulgagervej is a cul de sac, which causes people only to enter the site if they have a errand in the area.



The area surrounding the site has different functions, which is evident in the different typologies that you find there. North of the site and Godsbanen the density of the buildings and urban blocks is higher. The plot ratio is high, which tells us that this is a part of the city centre and the buildings have residential and most likely also commercial functions.

East of the site the typology consists of blocks and urban blocks with a lower plot ratio than the city centre. This is clearly shown in the area being mostly residential with some or a little commercial functions.

South of the site the typology consists of larger structures - again with a lower plot ratio than the city centre. These structures are used for commerce and industry, which is the reason that there is very few or no residential functions to be found in this area.

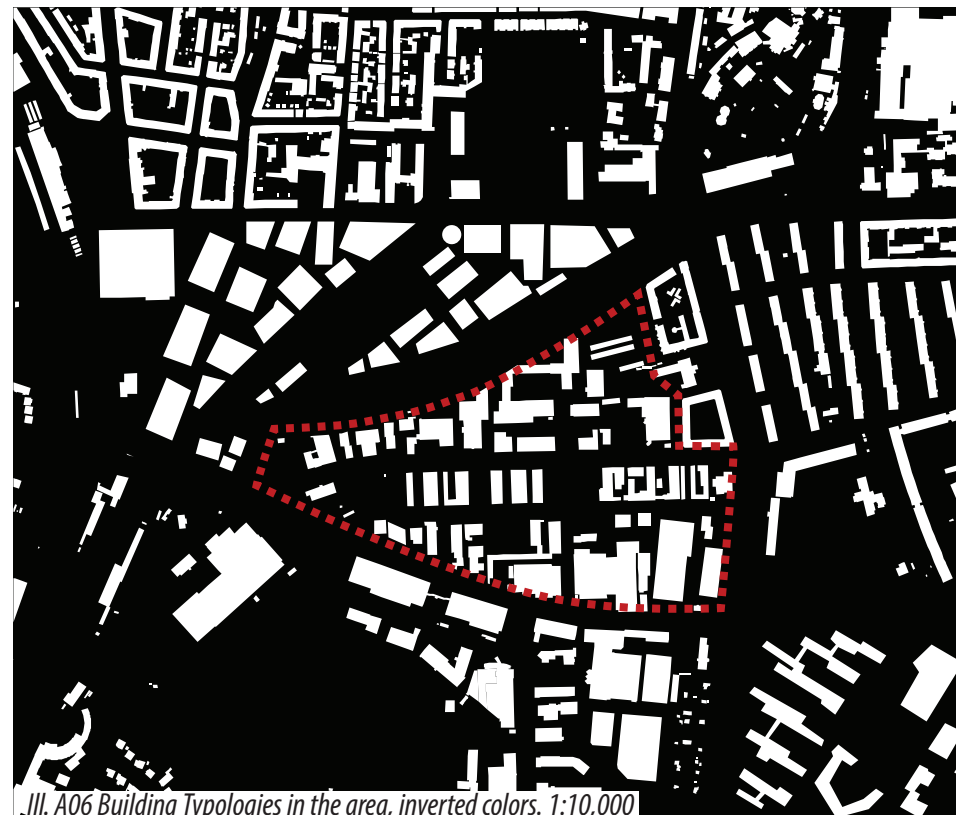
As mentioned, Godsbanen and Eternitten have some different functions as commercial, office space and residential areas. Two areas that are under development and therefore do not belong in an industrial area.

The typology testifies that the site is located in an area that is not a part of the city centre, but is located in between structures with more open characteristics and a lower plot ratio.

Looking at the site, the typology and plot ratio is very similar to the area just south of the there. The characteristics and functions are similar as well, which tells us that the current functions there are not inner city functions



III. A05 Building Typologies in the area. 1:10,000



III. A06 Building Typologies in the area, inverted colors. 1:10,000

Aalborg has a lot of green areas available for its inhabitants. The green areas in Aalborg offer different activities such as sport, recreational stops, and several other. The activities are mainly free of charge which a lot of people take advantage of whenever they have the opportunity. The people using the green areas have a wide variety of reasons to come there and they see a lot of use especially during the summer season.

As mentioned is a large park planned at Godsbanen, see Godsbanen & Eternitten. This park is mainly is addressed to young people and physically active people who lives locally. The sports

facilities offered there should ensure this goal.

There is no bigger green public areas is within 500 meters which will increase the attractiveness of Godsbaneparken, see ill. A07.



Today the site's outdoor spaces are characterized by its functions. It primarily consists of industry no recreational areas besides the stream. Unfortunately some of the buildings are abandoned and have been so for some time. This is evident in the dilapidation and the state of disrepair many of the buildings suffers from, not to mention the many of the buildings are painted over with graffiti. The site has a green element though which the stream and vegetation that you find in the area. Today the site is bordered by the two streets Sønderbro and Østre Allé and Godsbanen. The site has no connection to surrounding areas and appears as an isolated island within the city.

The municipality of Aalborg has a plan about doing an urban gradual renewal of the site. According to the plan the two areas Godsbanen and Eternitten, both under development, should relate to on some level without competing with each other. In order to achieve this the functions of the areas must be altered, in order to assimilate them into a inner city environment. It is the wish of the municipality to make the site serve as a connection between Godsbanen, Eternitten and the city centre. Furthermore the municipality does not wish the new structures and buildings at the site to exceed a height of three storeys. These wishes should of course be considered, but they should not limit the project if an alternative solution would serve

the area better.

As mentioned Godsbanen and Eternitten are two areas under development. At Godsbanen the plan is to add a park in between the new structures in the area and the site. Furthermore the closed off nature of the site should be made open and more inviting as to connect more with its surroundings.

The streets Sønderbro and Østre Allé are very busy with alot of vehicles passing through every day. This brings many people by the site and generates alot of noise. These aspects should be considered during the development of the site, since some functions may fit in better than others.

The typology around the site shows the buildings' functions and the plot ratio. Two important aspects, to be considered during the project design of the site.

Looking at the green areas around the project site, the only public, green and recreational area is the planned park Godsbaneparken. This park is designed with a certain target group in mind, which new green public spaces should not compete with.



III. A08 Graffiti in the tunnel



CONCEPT

CONCEPT

CONCEPT

CONCEPT



In order to make the site fit into a inner city environment, its functions has to be altered. As mentioned, the functions at the site consists primarily of industry. In order to make the site fit into a inner city environment, it has to be changed to residential, commerce and office spaces. Functions that you find in the inner city and functions that is also found at Godsbanen and Eternitten. The different functions have different demands and should be positioned so they make use of the surroundings as much as possible.

With new functions comes new urban spaces. These spaces must fit the functions of the buildings so its users have the possibility to take advantage of the outdoor spaces.

In order to change the site from being the isolated island in the city it is to day, it has to open up to its surroundings and be more open and oriented towards its surroundings.

Problem Statement

How can you do an urban gradual renewal of the site, so the functions fit into an inner city environment with attractive outdoor spaces for the users?

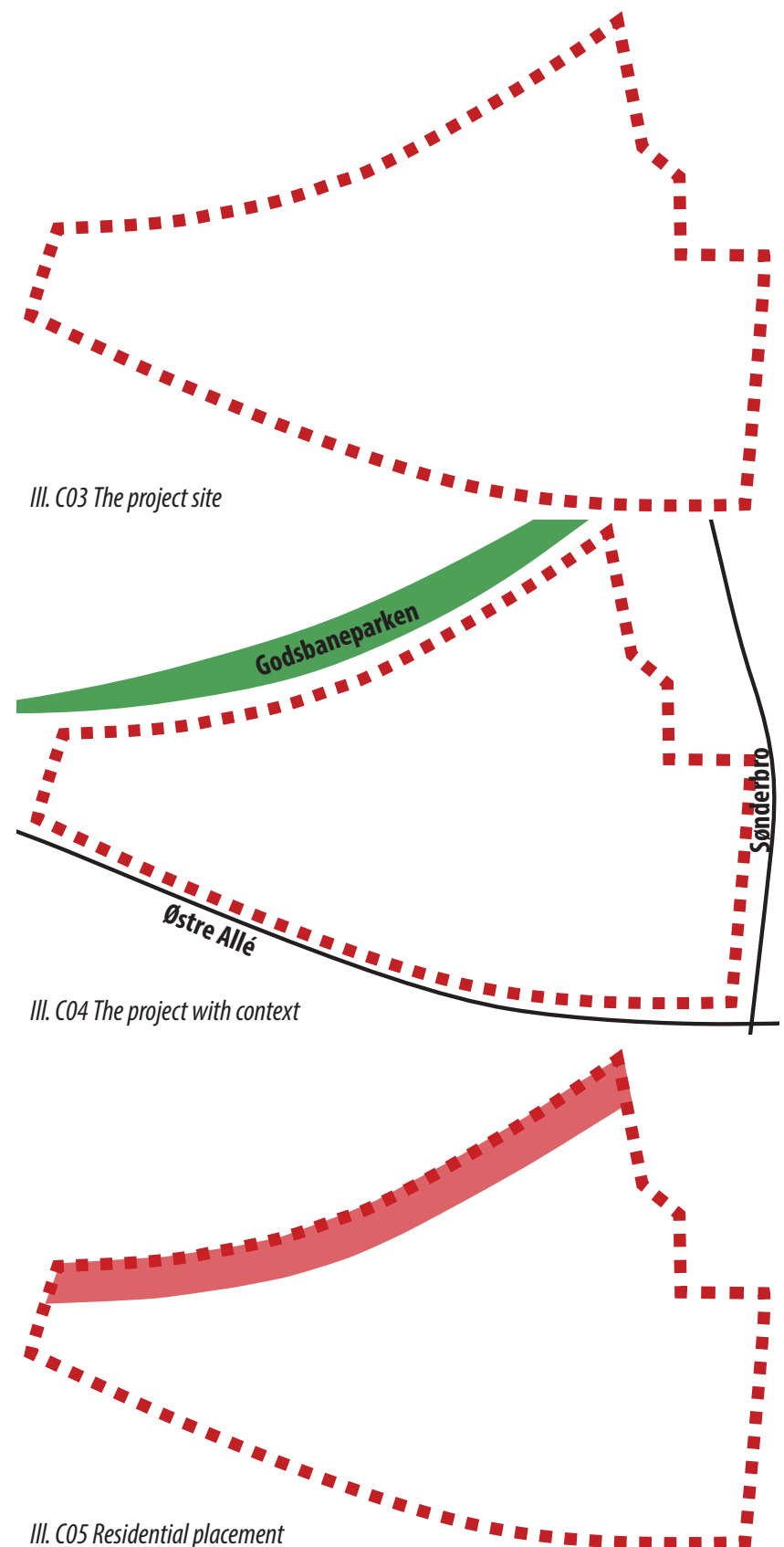




III. CO2 Locked site

In order to solve the problem statement, some drastic changes has to be done. By changing the main part of the functions from industry to residential, commerce and office spaces, very little of the original functions will be left. Since none of the buildings have any significant importance to the site or the city, none of them qualifies protected buildings. Therefore, the already existing buildings, need not be taken into consideration nor will they hinder the development of the site in any way.

Looking at the site to day, there is a large empty area, see ill. C03. An area that is defined by Sønderbro, Østre Allé and Godsbanen see ill. C04. To add the new functions, the placement is key to a successful development. Since Sønderbro and Østre Allé both are busy streets with a lot of noise from vehicles passing through and therefore very exposed, the areas facing the them may not be the right placement for residential. On the other hand the area facing Godsbaneparken, has less noise and is less exposed, and is therefore more ideally suited for residential, see ill. Co5.

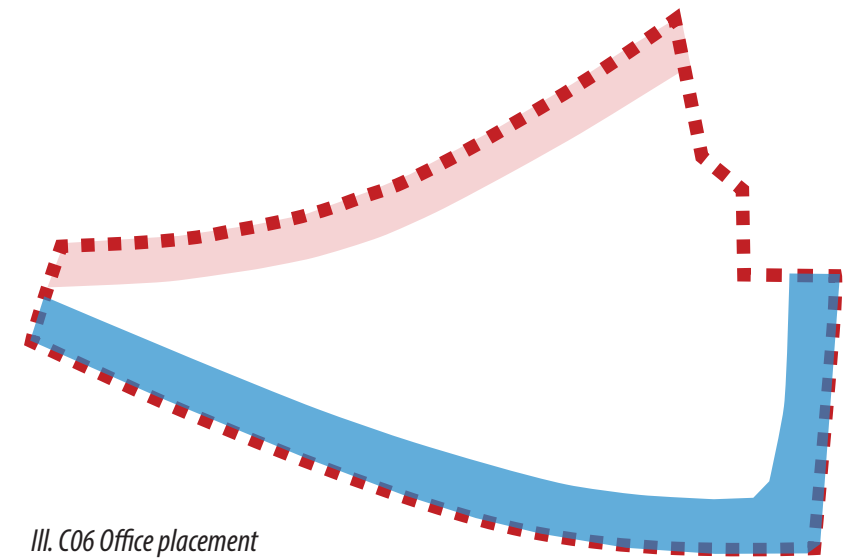


With a location for the residential, the placement of the office space is left. Sønderbro and Østre Allé both streets being highly busy and exposed would serve ideally as a space for commerce and office space, see ill. C06. By placing the office spaces and commerce in the exposed position, the companies and shops are able to brand themselves to all the people passing by. The buildings containing the office spaces and commerce should function as a contiguous structure that blocks for the noise from the vehicles passing by the site.

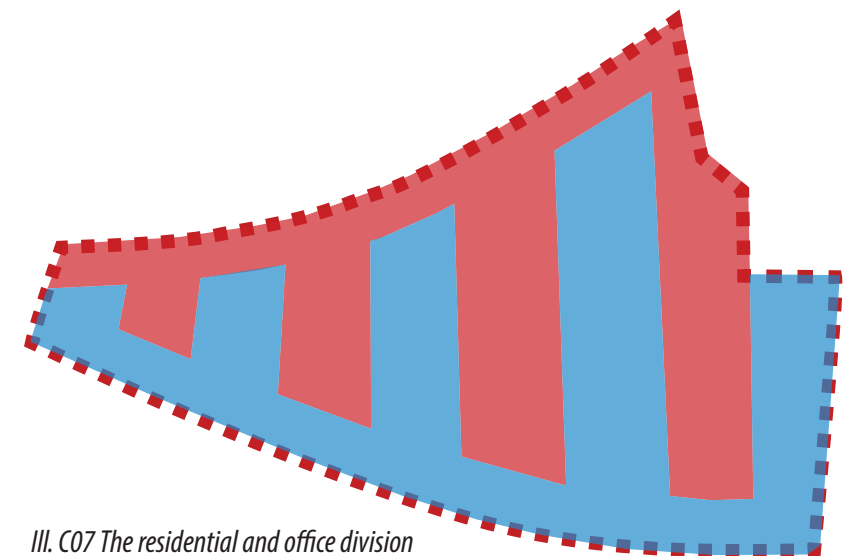
With the residential area placed next to Godsbaneparken and the office space and commerce along the roads a large vacuum is left in the middle. To avoid an island of residential and an island of office spaces and commerce the two functions should melt seemingly together. In order to make the functions blend together, the two areas must weave in between each other, see ill. C07.

By letting these functions melt together like this the area is activated during the whole day. For an example from 8 pm to 4 am the office spaces activate the area and from 4pm to 8 pm it is the residential area that brings life to the site with the local commerce servicing both the office spaces during the day, and the residential area in the evening.

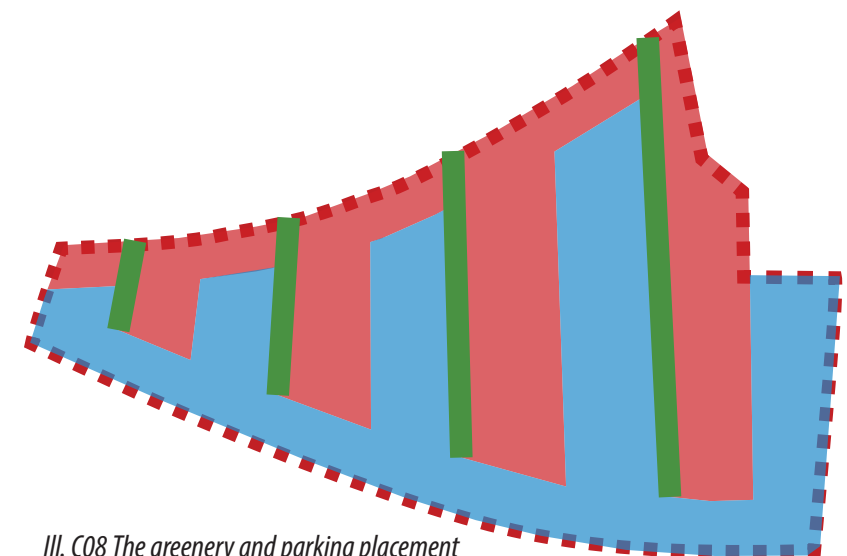
With the dividing of the site, the users of the site will need parking spaces. With Godsbaneparken north of the site, there is a green element, to make use of. By establishing green areas from north to south, not only will it create parking lots but it will also create a stronger tie to Godsbaneparken and help open up the inclosed space it is today, see ill. C08.



III. C06 Office placement



III. C07 The residential and office division



III. C08 The greenery and parking placement





While developing a site of this size you get a feeling of how large the site is. The length of the area is 630 meters and the width is 420 meters, see ill. S01. This gives an idea of the size. In comparison AaB's football field, measuring 105 x 68 meters, has been put down as a continuous duplicate overlay on the site, see ill. S02. The site is the length of six football fields, and the width of six football fields at the longest and widest spots.

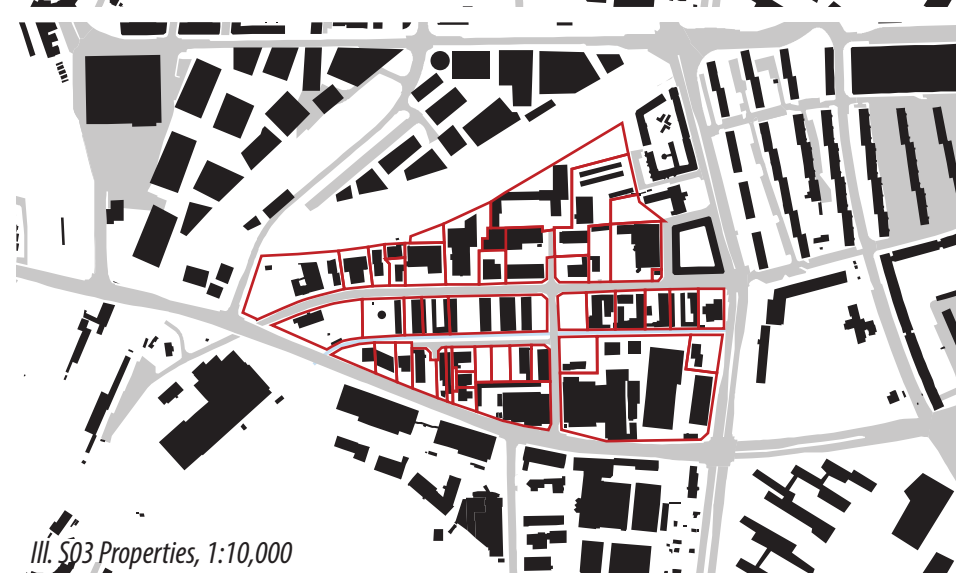
To develop such a huge site simultaneously, drastic measures are to be taken. It is more likely to divide the site into smaller areas and develop these in stages over a period of time. Currently the site is divided into a number of properties, see ill. S03. At first sight, the cluster of properties seem difficult to divide into sections but after closer inspection, we learn that several of the buildings are vacant with a number of them in a dilapidated condition, as mentioned in the chapter *Observations*.



Ill. S01 The site, 1:10,000

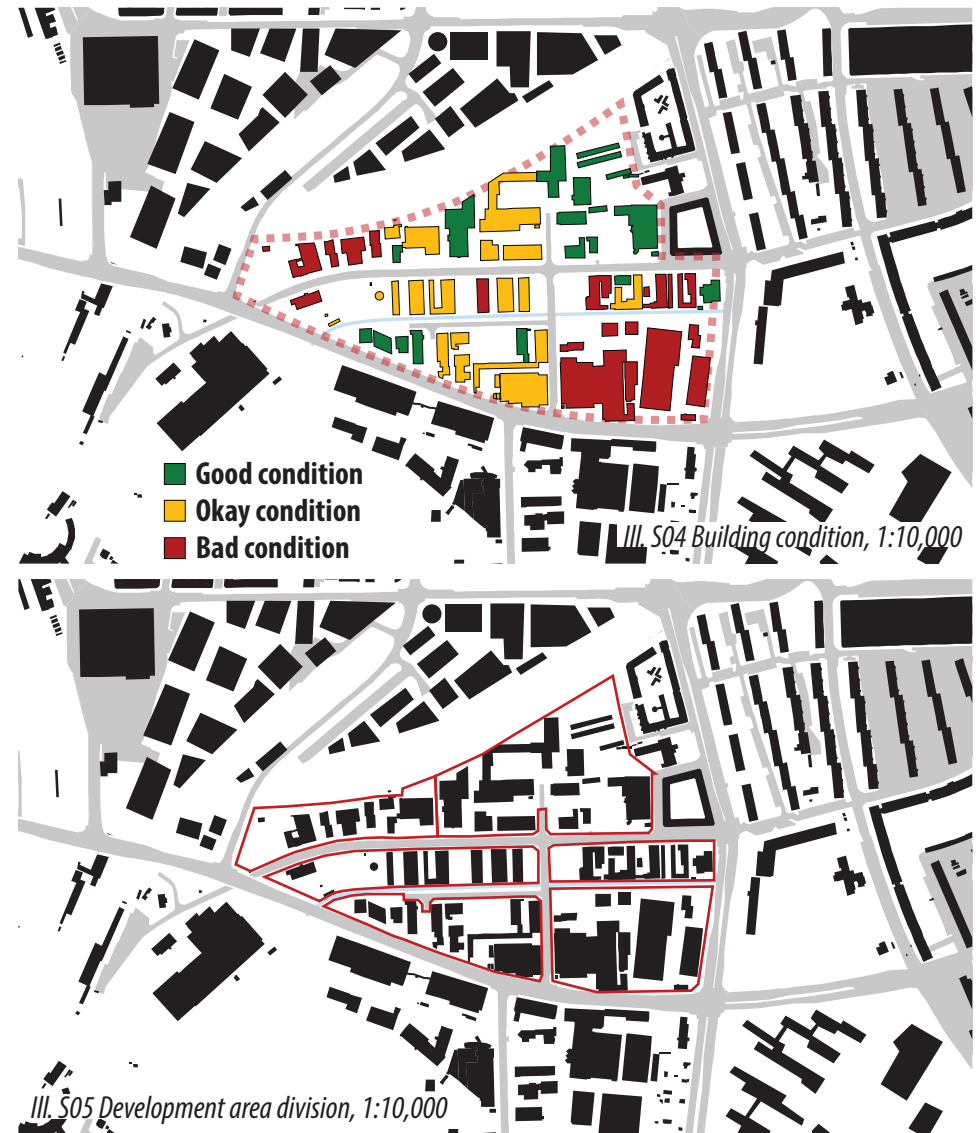


Ill. S02 AaB's football field layed down on the site, 1:10,000



Ill. S03 Properties, 1:10,000

Taking the condition of the buildings into consideration, see ill. S04, and with the properties subdivision in mind, the site can be divided into smaller areas. These areas, see ill. S05, can be worked on one at the time thereby developing the site in stages



After dividing of the site into smaller areas, the next step is to take a look at the use of the buildings. Some of the dilapidated buildings are vacant and would therefore be obvious places to start the development. In the south-eastern corner of the site, closest to the intersection of Sønderbro and Østre Allé, the buildings are vacant and in a state of misrepair – even collapsed unto itself in some places. This area is an obvious place to start the development of the site, see ill. S06. Furthermore it is the most exposed location in the entire the site, since it attracts attention from both Sønderbro and Østre Allé. As mentioned earlier, the site does not invite any users to the area, that have no reason to be there. By starting in this corner, everyone passing by the site will become aware of the development, and the site will gain a new identity. Because the intersection acts as a gateway to the inner city, when you arrive to Aalborg from the highway, this spot is perfectly ideal to begin branding the area.

The next area to start developing is the situated just north to the development area 1, see ill. S07. The buildings in this area are vacant and painted with graffiti. It is therefore the next logical and obvious area to start developing.

The third development area, is just to the west of development area 1, see ill. S08. By developing this area as the third part, the southern border will be finished first and it will be obvious to passersbyers that major changes are being done at the site. When the development 3 area is under construction, the area will gradually appear with more and more a inner city characteristics, and little by little people's view of the site will change from an industrial area to an integral part of the inner city. As the functions are altered more developers may find the place more interesting and thereby invest in the site.



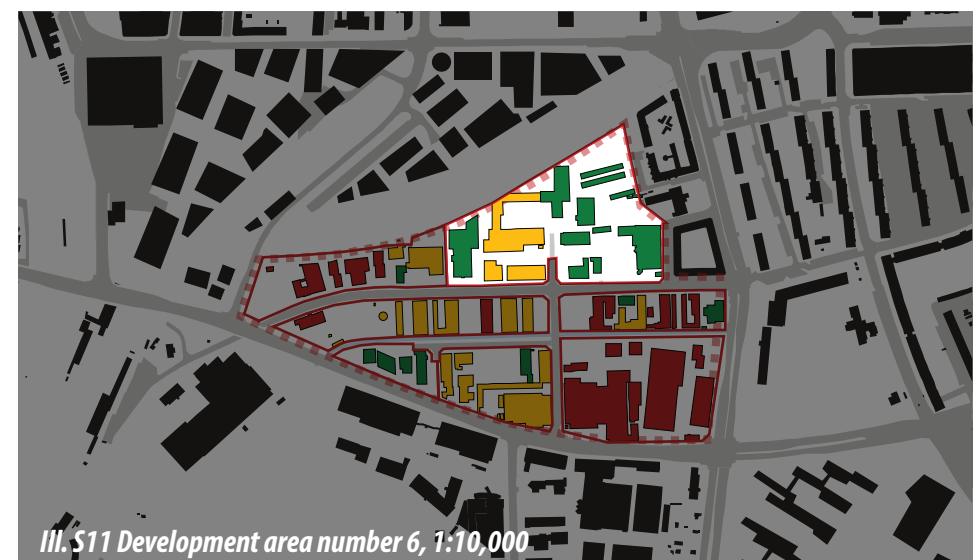
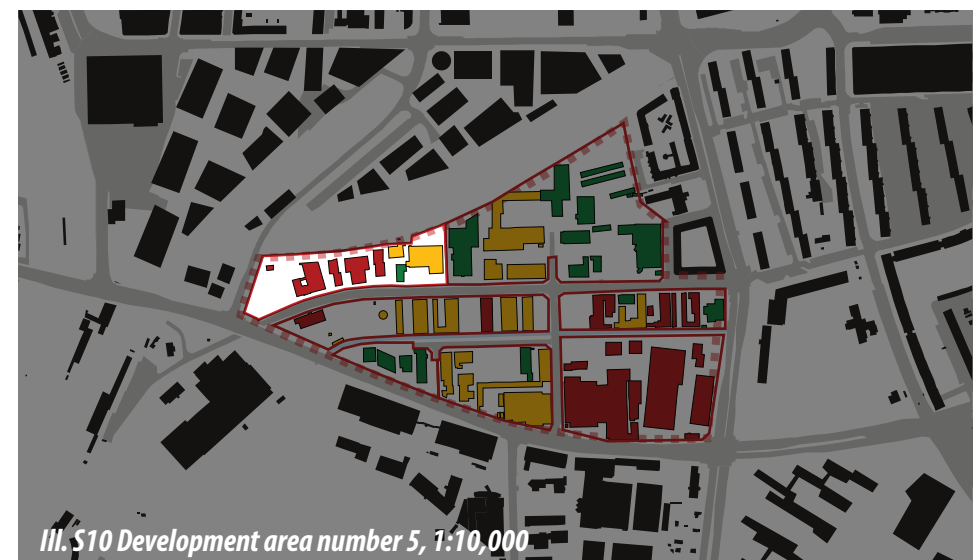
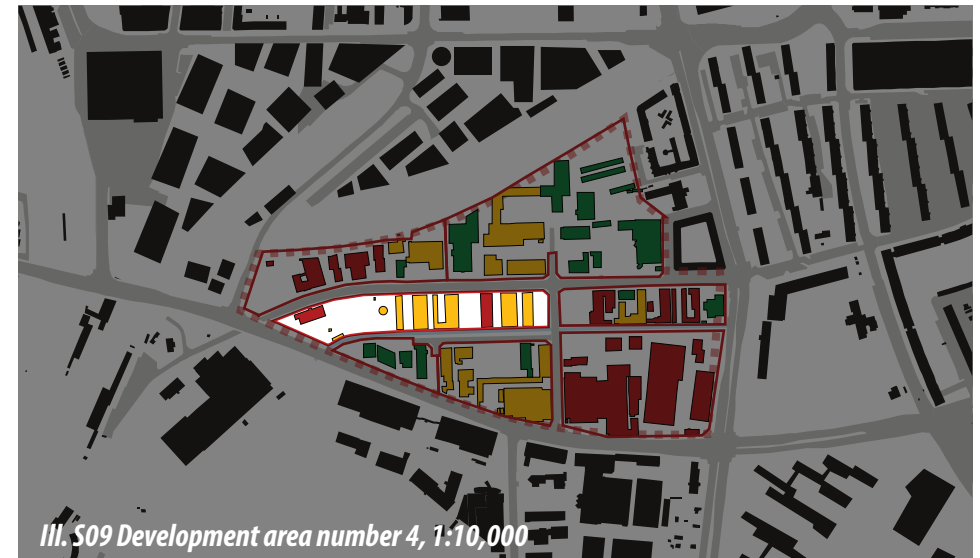
The fourth area that should be developed, is the area just north of development area 3, see ill. S09 and thereby completing the southern border of the site. When development area 4 has started to develop, the worst industry is gone from the site, including a concrete manufacturer.

Eliminating the worst industry from the site, it gets more attractive as a residential area. The next development area is the area just north of development area 54, see ill. S10.

The sixth and final development area is development area 6, see ill. S11. With this development the area has finished developing and should be fully occupied.

Development start

Before the development of the site can commence, all the properties in the specific development area have to be purchased starting with development area 1 and gradually buy into the other areas, as the previous developing area is finished or nearing completion. The ideal solution is to hire a contractor to do the work, together with an architect. The architect will be working after an overall design guideline and the final design must be approved before construction can begin.



With a place like the site, going through development like this, the site will have vacant buildings. After buying the properties, the associated buildings are still vacant as long as there is no developers to buy the place and start building. While the buildings are vacant, they are prone to vandalism. This can be avoided by letting interested prospects lease the buildings cheaply. In this way the property will be activated and acts of vandalism are more easily avoided. In addition renting out the usable buildings will also activate the area and will therefore appear more attractive for any prospective developers. This will of course be temporary measures. But sometimes the measures are found to be a great success and they go from being temporary and end up being permanent. In this case, too many temporary activations and measures are inadvisable, since the goal is to achieve a inner city environment.

use, and use it with good intentions. They are using it for recreational activities and sport, but they are here illegally. Allowing those people use the area for activities you again activate the area and it will appear more attractive.

Doing a development, it is important to remember, that the qualities of an urban spaces are not only made of the investment that you have done in the site. They also come from the users and inhabitants of the area, they create the events there and the story of the area.

An activation like this is normally started by the municipality, but can also be started by the owner of the properties or associates that sees unexploited potential in the area or building [Boye, A. .M. 2009].

Sometimes people find their way to industry outdoor areas that is longer not in



III. S12 Graffiti along the stream

Pavement

When choosing a pavement it is important to be aware if using special pavement. Beneath the roads are the pipelines, because it is the place with the easiest to access them, in case of repairs or maintenance. Should they need to be repaired, the pavement will be removed and in the most cases the pavement is replaced, since it is difficult to put down the same pavement again. This often ruins the pattern. So by using special pavement, it is important to consider if it is worth the investment to make it stand out beautifully. If not regular pavement tiles is a cheaper solution, with a simple pattern that is easy to repair. By saving money on the pavement, you will be able to invest more money on the lightning and greenery [Barnett, J. 2003: 226-227].

Park

People is less willing to use public spaces, when they cannot see the exit. That is why elevated and lowered squares and plazas are less popular similar to blind streets and alleys.

If the public spaces is facing north and have no sun, it will not used by people. Not even if it is warm outside, since people will follow the sun. However, people want both sun and shade when it is really warm. So an optimized urban space provides both sun and shade. When it is a warm outside, people want to sit in the shade where a little breeze comes now and then. But when it is cold outside, people are looking for a sunny and windless spot. So a good public space offers both. Wind can cause uncomfortable conditions and make people search for other opportunities.

Some places, for instance New York, the wind can accelerate so much that it is able to topple people, if the surrounding buildings are too tall, therefore it is important to consider the height of the buildings. On a very hot day, trees and fountains are able to cool their surroundings. On a cool day, a south-facing wall can be ideal to hold onto the heat and block for the wind.

Seating in public places can be benches, ledges on buildings, or edges of plant boxes. As long as the seat is more than 30 centimetres high, it will be comfortable to sit on. Barnett refers to Whyte, who advocates the ability to rent chairs so people are able to sit in groups wherever they want, which will require somebody providing those services - a good example is Bryant Park. Benches also have to be added in public spaces, but they have to be long enough to make people sit down, even if there is stranger sitting there already. People will always sit down, so they are able to see other people or look in the direction where something is happening.

Lightning is also an important part of public spaces - even when closed. Good lightning will often prevent a space from being vandalized. Around a public space functions should be added that fits and enhances the space to ensure it will get used. Too tall buildings should not be placed next to a square or public space if it can be avoided in other words the scale of buildings and the public space should be balanced. It is possible to communicate with people on the third floor, but further above it will get increasingly harder. In public buildings you should be able to communicate with people, so you for instance can see people sitting down and eating on the third floor [Barnett, J. 2003: 231-234].

Within a 100 meters, people are able to read body signals. That is why a square rarely is wider or longer than 100 meters. This gives the users a good overview of the area.

Spaces

Pathways and streets are considered as spaces for moving. That comes from the oblong and rectangular form, which is a leading form. By using a square form a more inviting form arises that is better suited for a space to stay. It is not necessary to stay at the space to be a part of it. The surrounding buildings also help define the square. The people in the buildings can be a part of the square as long as they are

not on a floor above the fifth floor.

Individual Experience

When you are moving through the city, the experience depends on the speed in which you are moving. When moving slowly you are able to get a lot of impressions and you perceive more details. But if you are moving fast, it is another matter. Traffic signs for instance have to be larger and you do not perceive the as many details. The distance is also an important factor. At a short distance, you get strong impressions and a long distance you get a lot of impressions [Gehl, J. 2010].



III. S13 Graffiti along the stream

In order to achieve optimal spaces between the buildings, it is essential to look at the height of the buildings and the relation to the space, see ill. S14 and S15.

1:2

Between the buildings, the space in the middle is dominating. The users will move slowly at a speed from 0-5 km/hour, because they will feel comfortable, and the space will not appear as a passage. Even if it is a passage, it can be used for staying, because the space is more dominating.

1:1

The relation between the space and the buildings appear equal. The speed the users are moving in is still 0-5km/hour since they can do some short stops. If the space offers full stop, they will probably use it but only for a short time, since you are exposed to people in the buildings.

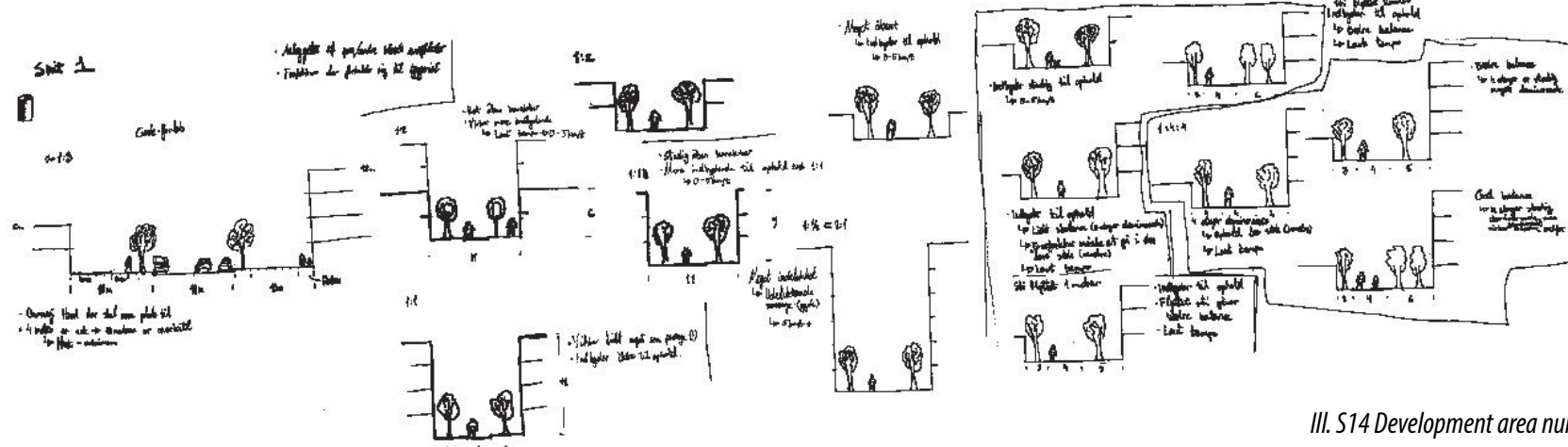
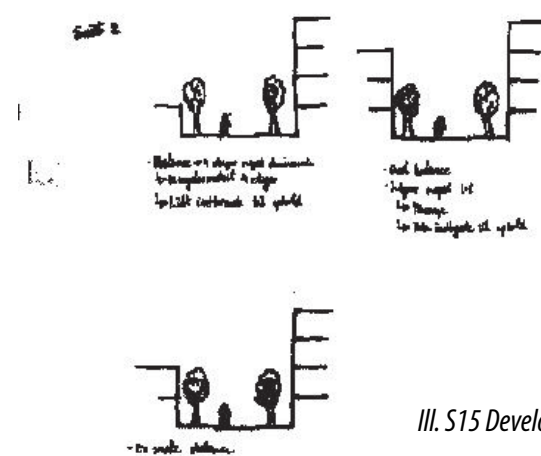
2+:1

The buildings are really dominating and the space in between appears more as a passage. The users will move no slower than 5km/hour and they will try to avoid doing full stops, because the space appears uninviting. With the dominating buildings, they will get a claustrophobic feeling and just pass through.

Odd dimensions

The odd dimensions, such as 1:4:4 and 1:2:2 give the user another feeling. By having odd dimensions, the claustrophobic feeling is gone and they will move with 0-5km/hour. The most attractive place to stay is closest to the low building, since the tall building will appear very dominating. Full stops and passages should be away from the tall building, unless there are other conditions that make this an attractive space.

The 1:2 space invites people to stay. The 1:1 space is not as inviting but can be used for short stays and passage. The 2:1 is more likely to be used for passage only, since the buildings start to get really dominating.



In order to create the best outdoor spaces, it is essential to look at the variation of typologies, see ill. S16, that are going to define the spaces.

Dots

The dots have a lot of gaps between them as long as they are not compounded. With the dots, there is not a specific direction or path, because the gaps give the user the opportunity to make a turn at random.

Blocks

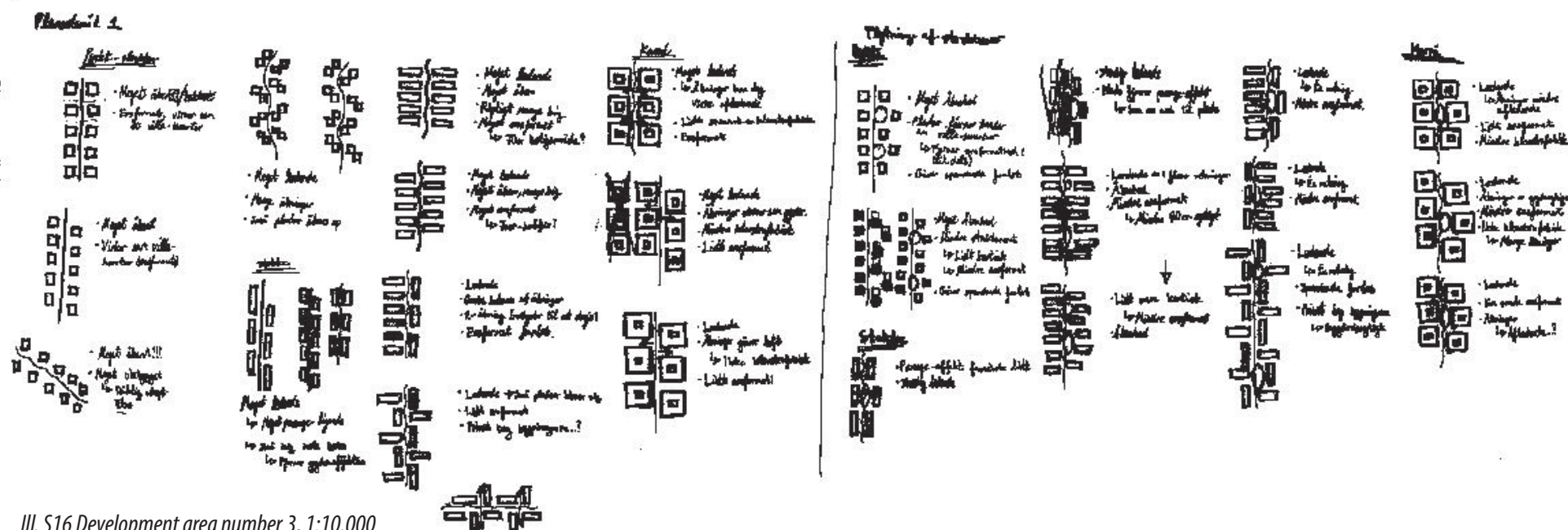
The blocks have an oblong form and have the can be arranged to form a more contiguous path. The direction gets a strong definition and create an oblong form, that works very well as a passage according to Jan Gehl.

Urban Blocks

Urban blocks have a similar function as the blocks. The urban blocks can be arranged almost as desired and because of their relative size they will form fewer passages than dots in the same amount of space. Though the passages can appear as intersections, and invite the user to make a random turn and leave the passage.

Spaces along the Passage

By creating spaces along the passage, see ill. S16, it will define the passage more clearly. Having openings along the passage make it seem more alive and dynamic and the passage will retain the focus. The passage a rhythm which the side paths will not have.



As mentioned in the chapter Street Profiles, the 1:2 ratio is ideal as a space for staying, the 1:1 ratio is suitable for both staying and passage and the 2:1 is for passage only. To create the best passages, it is essential to look at the different passage profiles, see ill. S17, which shows passage profiles from 1:1 to 6:1.

1:1

Works fine as a passage. It does not have a claustrophobic character and could therefore be used for short stays as well. The users could go here for a long distance and stay here for some time.

1½:1

Works fine as a passage. The buildings start to become a little dominating without giving the user a claustrophobic feeling. The users could go here for a long distance and stay here for a short time.

1½:1

The buildings start becoming more dominating, but could still function as a pas-

sage. With the dominating buildings, the passage becomes claustrophobic and may have none or very few full stops.

2:1

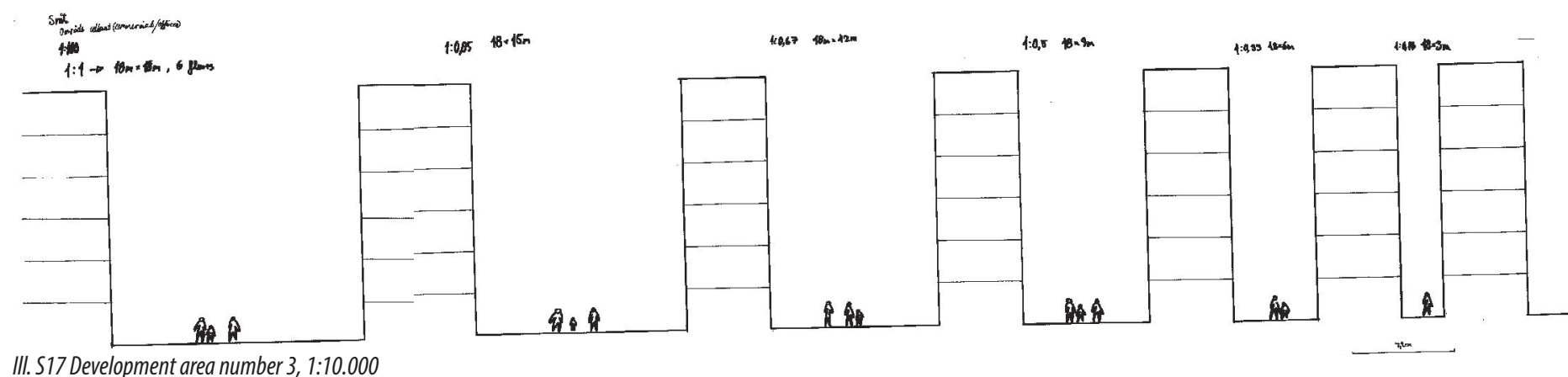
The buildings become even more dominating. The claustrophobic feeling may cause no stops and only moving, and the users are only willing to walk here for a short distance.

3:1

The buildings are very dominating and have a claustrophobic character. No stops and the users are only willing to walk a short distance.









































6:1

The buildings are very dominating almost intrusive. It is very claustrophobic and does not invite for any kind of full stops. The users are only willing to go here for a very short distance.

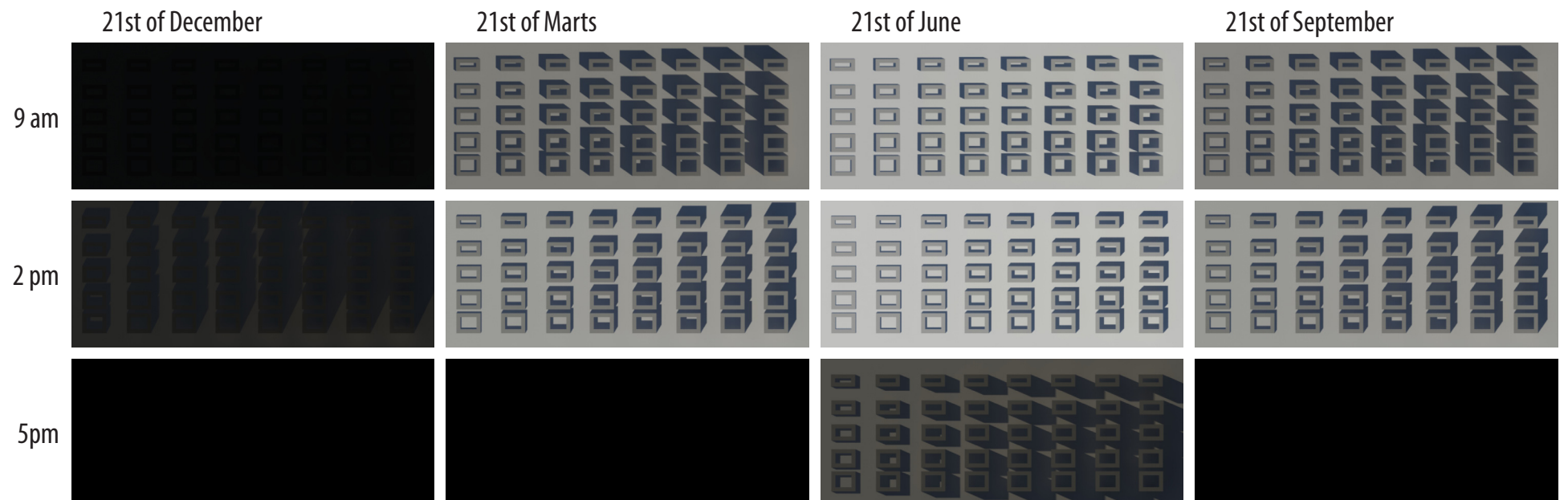


In order to achieve the best shadow conditions, shadows studies have been done, see ill. S18 and S19. As the studies show, the structures that are five floors and more are casting a larger shadow. At some points during the day, they will cast shadows on the surroundings areas. In order to avoid the buildings casting too much shadow at the property and its surroundings, the floor height toward south, east and west should be taken into consideration.

Looking at the urban blocks, that has been used in the shadow study, the back-yard of the urban blocks should not be too small. In order to achieve the best sun conditions in the inner yard, width and depth should not be shorter than 20 meters. By using those dimension, it is possible at the same time to avoid that the space in between appears as a passage.

Gaps/floors	One	Two	Three	Four	Five	Six	Seven	Eight
10m								
15m								
20m								
25m								
30m								

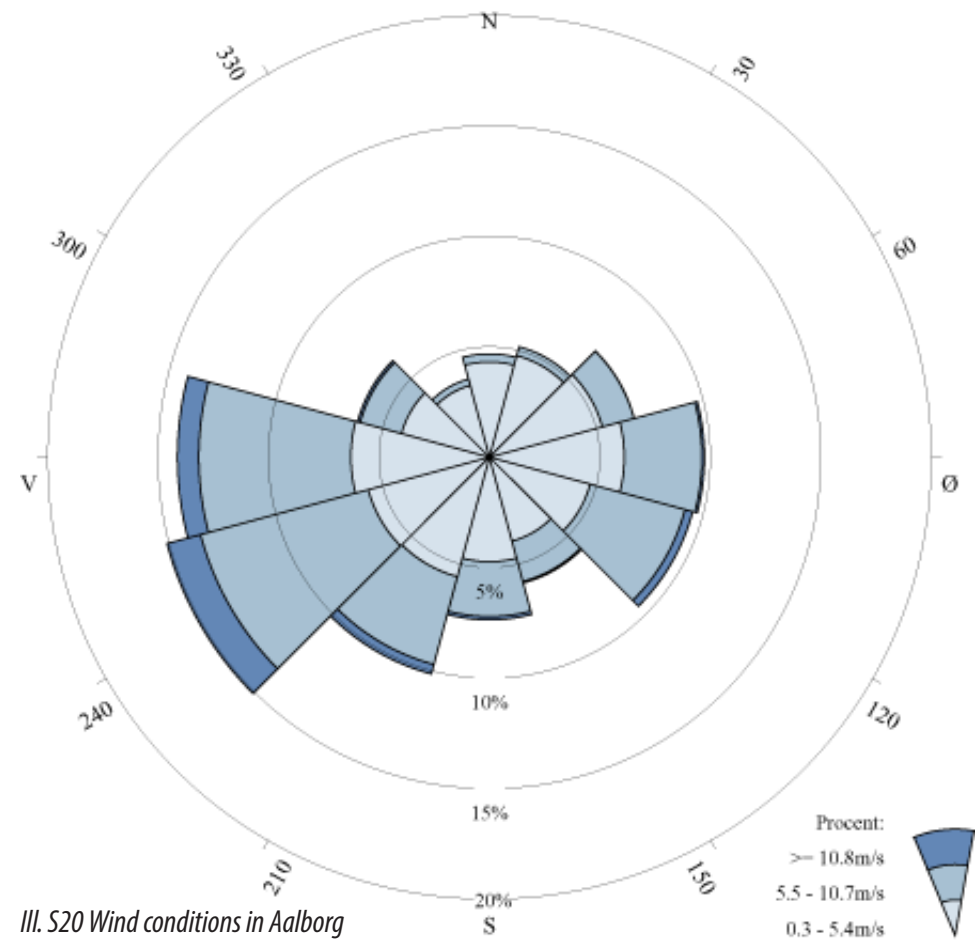
Ill.S18 Shadow Studies



Ill. S19 Shadow Studies

WIND CONDITIONS

To achieve the best wind condition at the site, it is essential to look at the wind conditions in Aalborg, see ill. S20. The most wind comes from west, west-south-west and east, with very little coming from south and north. In order to achieve the best wind conditions the obvious choice is to block or reduce the wind from east and west. Good wind conditions can be achieved with structures and plants which are good methods to reduce the wind. However, buildings should not be too tall, since that will cause the wind accelerate and act like a funnel thereby creating unsatisfactory wind conditions.







DESIGN ASPECTS

As mentioned in the chapter Development, the site is divided into six smaller areas, see ill. D01. The areas that should be developed one at the time over a period of years.

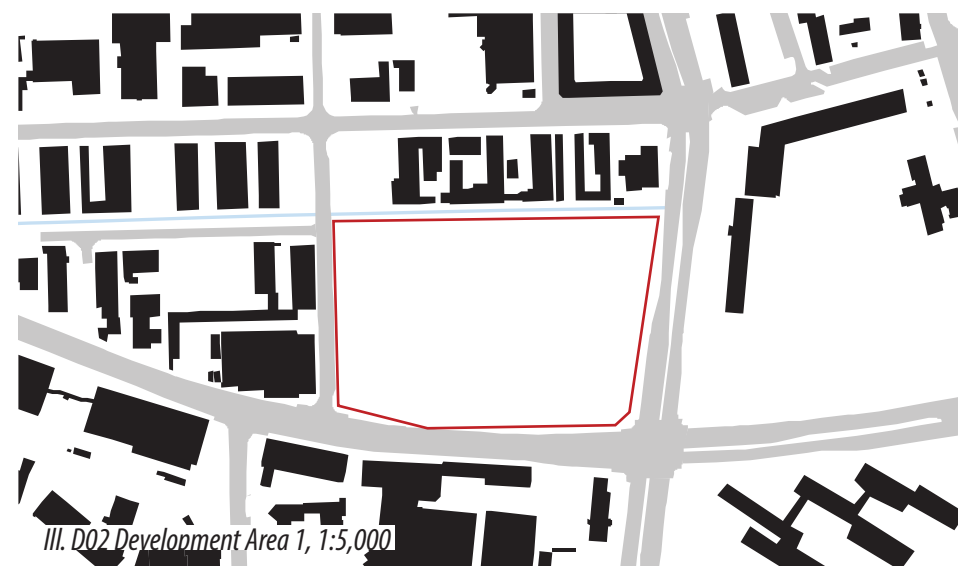
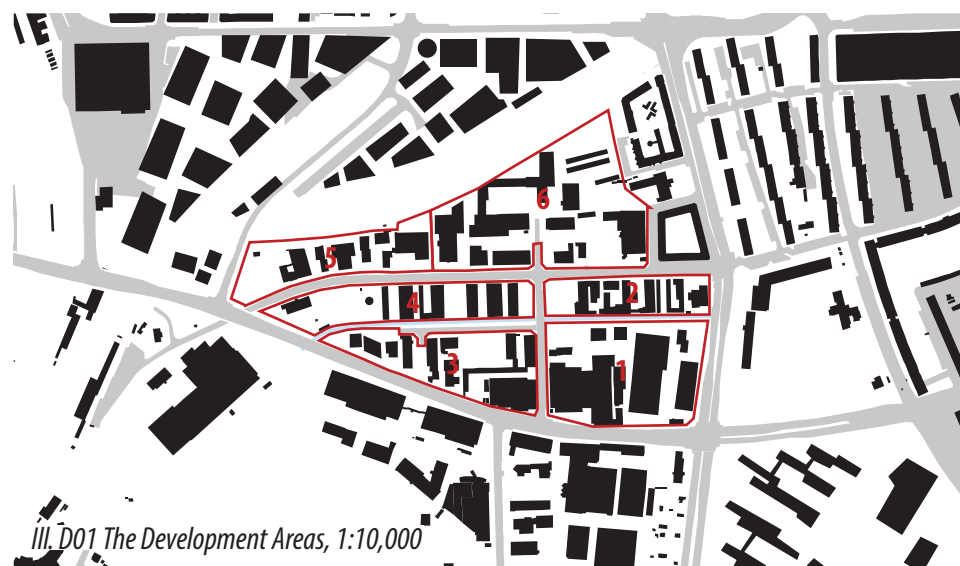
In order to make the site work as desired, design parameters must be established, that must be adhered too for the site as a whole. As mentioned in the chapter Concept, the, functions must blend seemingly together to prevent the site being divided into – namely a residential area and a commercial and office space area. As a result of, both residential and commercial and office space areas, have been added to the developing areas. Another function that has been added to the site is the green areas for car parking and recreational stays. That gives the site three separate functions; residential, commercial and office space and green areas (that also doubles as a parking lot).

In order to give the developers an opportunity to make their own individual impact

on their respective properties, the site as a whole should not be programmed 100% . The three functions should be added so the area can function according to the intent of the plan and the developer should be given free reigns to design the rest of the area. To avoid too small clusters of residential or commercial and office space areas, the programmed area should be large enough to function well in the developer area but at the same time not too large. In the light of that, the functions should make up 20% each - if it possible. The three first design parameters are therefore found. As an overall guideline the developer areas must consist of:

- 20% Residential areas
- 20% Commercial and office space areas
- 20% Green areas

The first area is now ready for the development, see ill. D02.



Placement of Functions

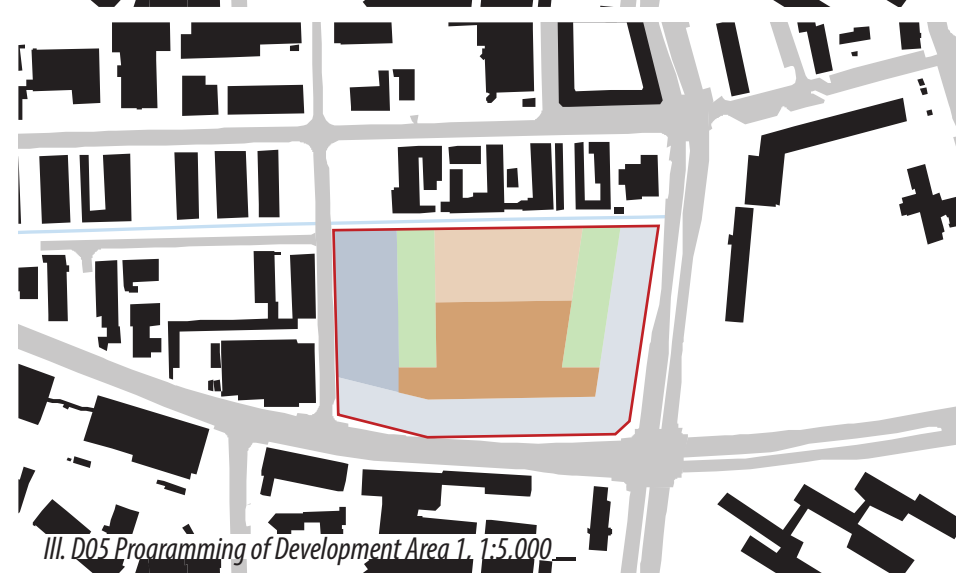
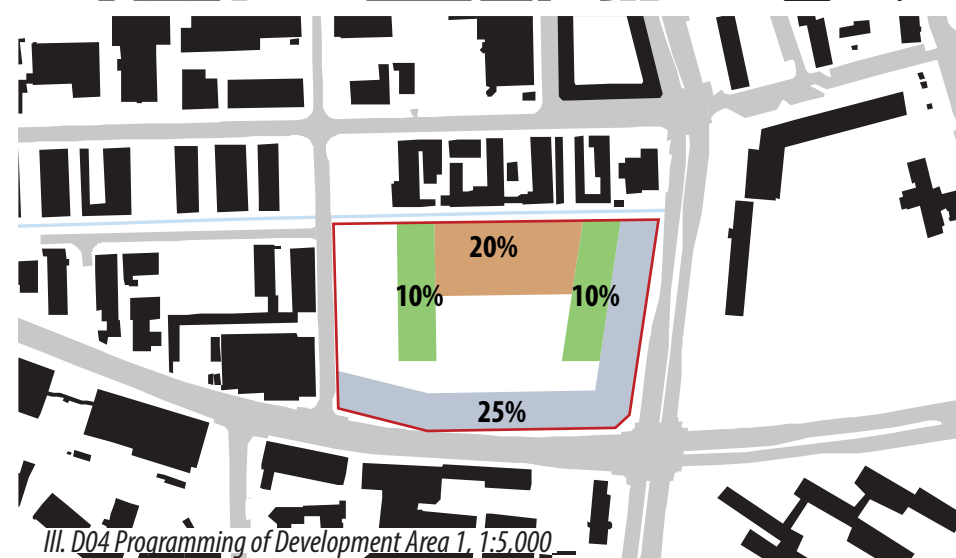
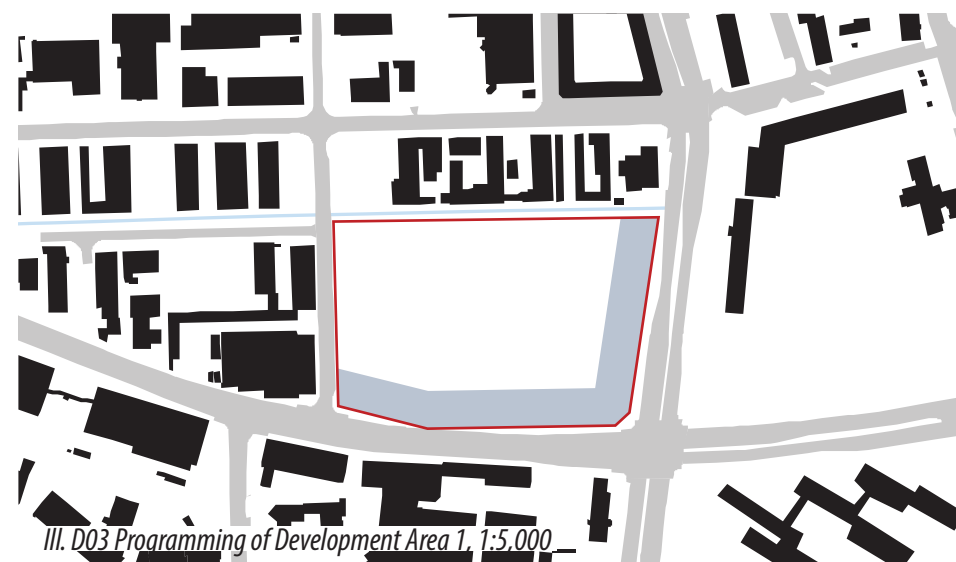
As mentioned in the chapter *Concept*, the commercial and office space areas must be located closest to the bypassing streets Sønderbro and Østre Allé. Here it will serve as a sound barrier from the noise from the streets, see ill. D03. To make this happen, the commercial and office space area must take over 25% of the developing area, which is 5% more than planned. But as the distribution of percentages was a guideline that should be followed if possible, the ambition of having sound barrier takes precedence.

With the placement of the commercial and office space area done, the placement of the residential and green areas are left. Because it is the plan to have green areas connecting with Godsbaneparken, two patches of green area should be added as well.

In keeping with the development guidelines 20 % residential areas should be included in each development area. Placing the residential in the northern part of the area is therefore an optimal solution, see ill. D04.

Tallying the percentages, this particular development area will consist of 25% commercial and office space area, 20% residential and 20% and green areas, with 35% left to be programmed. This is up to the developer of the site to do. According to the plans of the developer and the demands of the city the remaining 35% could be primarily any of the three options laid forth by the guidelines, a little of both or something entirely else as long as it enhances the development area, see ill. D05.

As mentioned in the chapter *Wind Conditions*, the wind is primarily coming from the east and the west. By having office and residential towards both east and west of the green areas, you will reduce the wind during the main part of the time.



With the fundamental design parameters concluded, the next step is to have a look at the plot ratio. Since the site is a part of the inner city, but not a part of the city centre, the plot ratio should be lower than in the city centre. Because the surroundings of the site has a plot ratio around 100, as mentioned in the chapter Typology, the plot ratio at the site should not be higher than 100. However there should be space left for outdoor stays for the users of the site, so the plot ratio, should be a little lower than 100. Since 20% of the development area is going to consist of parking, and the rest should belong to the functions, 80 is proper.

Development area 1 is about 25,000m² in total. 20% is car parking and green areas and the rest could be 40% commercial and office space areas and 40% residential. With the plot ratio at 80, it means that both the commercial and office space areas and residential could build just one floor all over. To avoid this, design parameters for the commercial and office space areas and residential must be made for this particular development area. In order to avoid one big flat office building, at least 65% of it must be built two storeys tall. The remaining 35% can be built as desired, for an example on the top of the 65% or next to it. The same applies to the residential. The design parameter for the commercial and office space area are:

- 65% of the office must be constructed in two storeys tall. The remaining 35% can be constructed according to the wishes of the developer.

The residential should have some private or semi-private outdoor spaces for the people living there. To achieve this the residential buildings should be placed so it forms one or more outdoor spaces. As mentioned in the chapter Sun & Shade, the space between the buildings, should at least be 20 x 20 meters. This is done to avoid to creating a space that is too claustrophobic, as mentioned in the chapter Passage Profile, that nobody would want to use. Furthermore the sun conditions are improved inside the space, because the spaces will allow for more sun during the whole year. So in order to achieve the best sun conditions and avoid a one

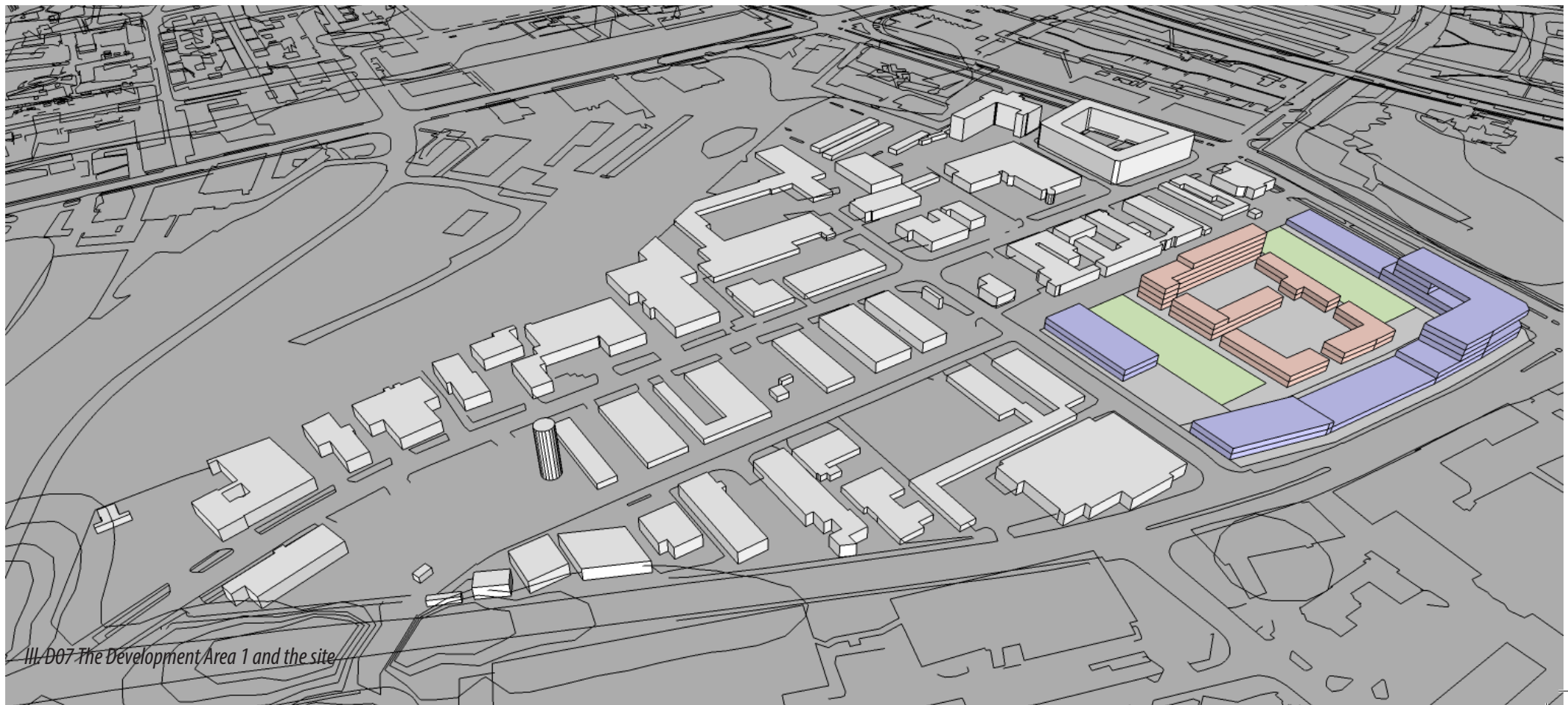
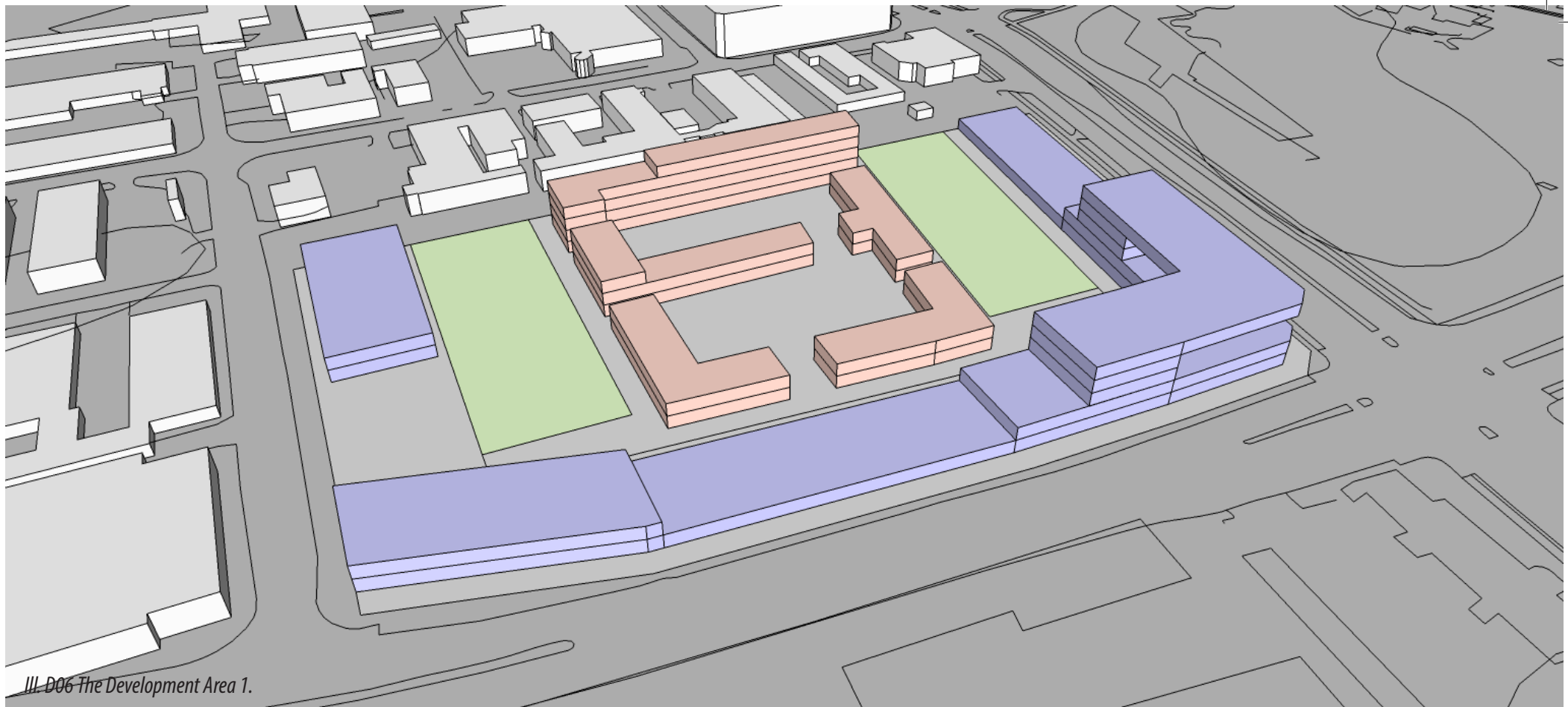
storey, flat residential building, the residential to the south, east and west should not be taller than three storeys, but not less than two storeys. Because a northern building will have less influence on the sun conditions at the specific area, it can be build as tall as desired. This outlines a design parameter for the residential:

- The residential buildings are to be constructed in at least two storeys tall. Towards south, east and west, it may not be any taller than three storeys, but towards north it can be as tall as desired.
- The residential buildings must to form a outdoor space for the people living in the building.

As mentioned in the chapter Development, this area is closest to the intersection, therefore some extraordinary measures must be taken in designing it. In order to welcome people from the highway to the inner city of Aalborg and to draw attention the existence of the site, it should be given more leeway than the other development areas. With the new design parameters, the development area 1 is ready to be designed, see ill. D06 and D07.

The contiguous structure of office along the two streets forms the required barrier that blocks out the noise from the vehicles passing by. That creates a calmer atmosphere inside development area 1, where the green areas can be used for car parking and recreational stays:

- 20% Residential, where the buildings must constructed in at least two floors. Towards south, east and west, in can not be anymore than three floors, but towards north it can be built as high as wanted. The residential buildings have to form a outdoor space for the people living in the building.
- 20% Office, where 65% must be constructed as two floors.
- 20% Green areas

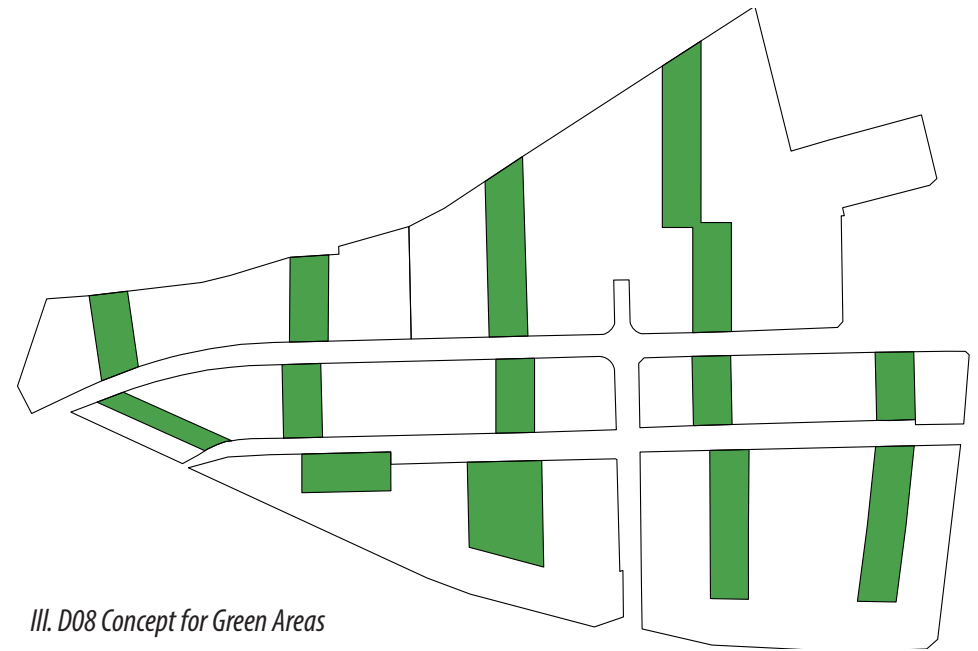


With the design parameters for the residential and the office, the green outdoor spaces needs to be designed. As mentioned, those should work as green links from Godsbaneparken. Those green links, should function as car parking and public urban spaces, mainly addressing to the users of the site, see ill. D08.

Car Parking

Since the green areas are in between the residential and office, the green areas should address to both of them. By making car parking in between the two functions, that are in use different times of the day, you should make double use of the car parking. For instance, when the people living in the area goes to work, they will take their car and leave the site. Then there is a free car parking spots, and the people working in the area, may use them. According to the municipality of Aalborg, there is no right way to make double use of the car parking [Link 2]. But when you do a double use of car parking, you can not expect that it works with 100% of the car parking. 75% of the car parking should be double used. If more spots are needed, more spots should be added. For an example, if residential needs 16 car parking spots, and the office needs 16 car parking spots, 75% of the car parking spots can be double used. $75\% \text{ of } 16 = 12$. The office then need $16 - 12 = 4$ car parking spots. Those four car parking spots must be added to 16, which mean that 20 car parking spots are needed and the rest of the green area should function as recreational areas, see ill. D09.

Since it is a residential neighbourhood, the cars should slow down on the car parking lots, as children may play outside. When the car parking is a part of a green area, the pavement here should be green and slow down the speeds of the vehicles.



III. D08 Concept for Green Areas



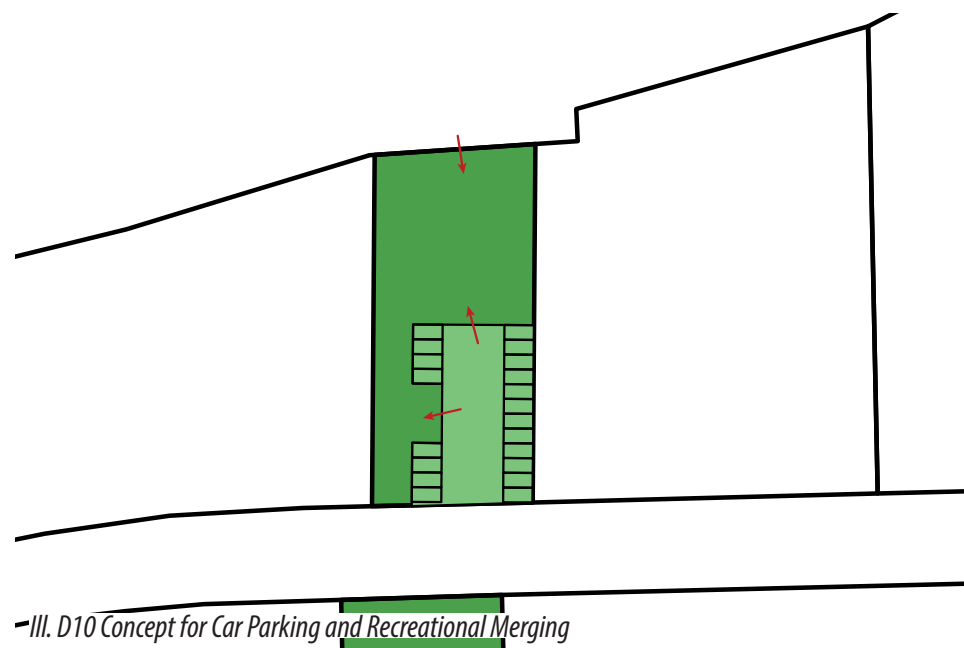
III. D09 Concept for Car Parking and Recreational division

Recreational Areas

The outdoor spaces are mainly addressed to the users of the site but could also be used by people coming from outside the site. Since Godsbaneparken is going to be a big park that addresses to groups, long stays and different kind of sport, the green areas at the site should not compete with Godsbanen. The green spots should be an alternative to the Godsbaneparken.

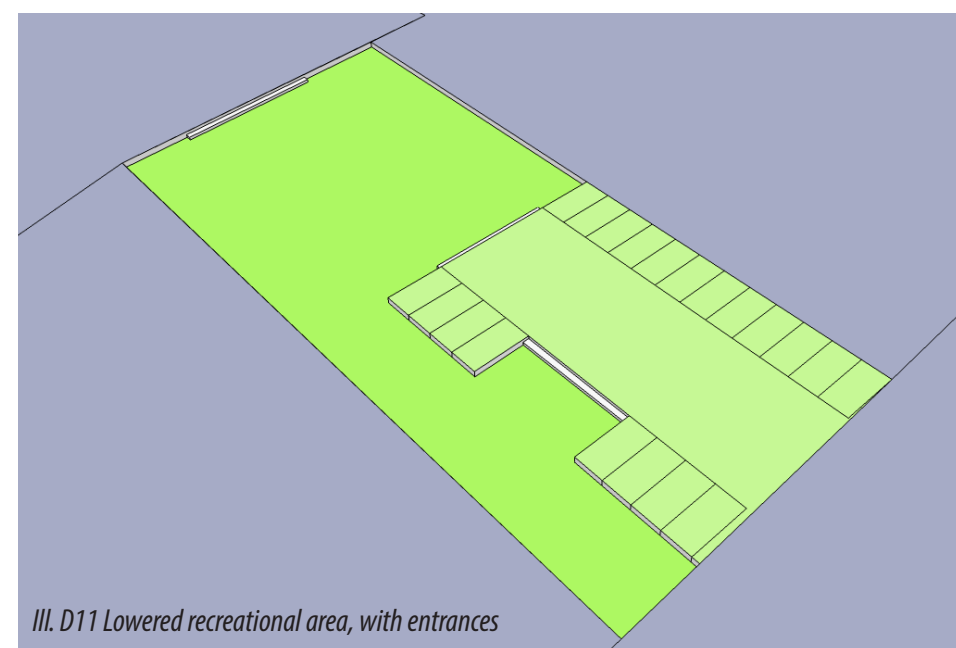
In order to avoid competing with Godsbaneparken, the recreational areas should address to another target group. Since Godsbaneparken is designed for groups, long stays, and sport, the green areas at the site should offer other activities. It should address to both the residential and the office. A place you can go to, if you want to stay in a calm environment for a short or longer time. A place you can go to as a little group or on your own as an alternative to Godsbaneparken. The green recreational areas must:

- Address to small groups or the individual.
- Designed for short stays, with the opportunity to stay for a long time.



Godsbaneparken may appear as a very exposed and public place to stay. In order to give the user a more private place to stay, the recreational areas should offer privacy for the user. To achieve this, the recreational area must have a private character, without appearing isolated at the site or at the developing area. To make that happen, the recreational areas should be lowered. Barnett argues that people do not want to use lowered spaces, but the green areas is only lowered 50 cm, in which case the user still have a good overview. The recreational area and the car parking should merge together in order to achieve a more coherent area, see ill. D10. In order to give the user a comfortable feeling it should be clearly where the entrances and exits are, see the chapter *City Space Design*. From the parking lot and other surroundings, you should be able to enter the recreational area, to achieve a better link to the context, see ill. D11. The area must meet the following:

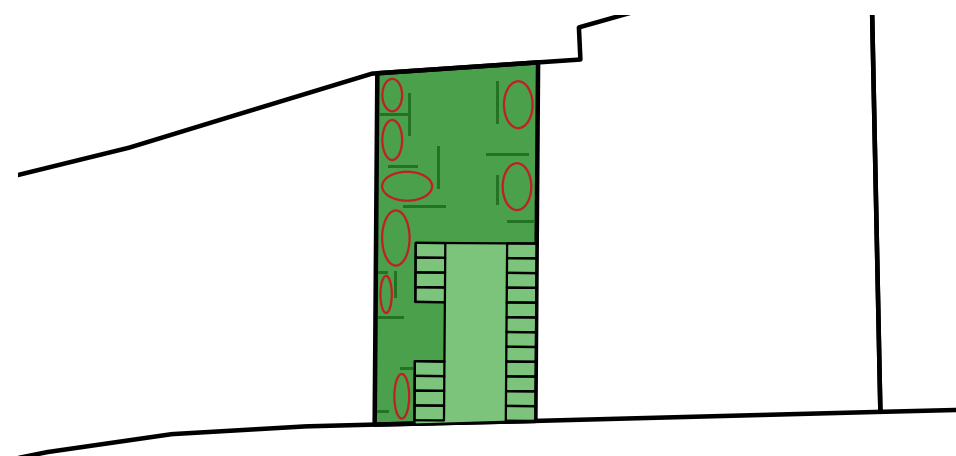
- Recreational area must be lowered.
- Visible entrances from the parking lot and the surroundings.



In order to design small spaces for the user, consisting of the individual person or a minor group, the recreational area must be divided into smaller areas. The division should not split up the park, but form small pockets the user can stay in, to achieve a private feeling in a public area. Since it is a green area, the small pockets should be formed by a green element, that does not make a wall, but is defining the pocket space see ill. D12.

In order to make the recreational areas work the whole season, it should have different materials. The surface in a green area should be grass, which works fine during the summer period for seating and other stays. But during the winter period, when people do not use that much time outside, grass is not an attractive element. During the winter season, hard surfaces works better in the recreational areas - both for stays and movement. During the winter period you can not expect the user to use the recreational area for a long time, but the user should have the opportunity to stay here for a short time. In order to give the user short time stays, seating must be added to the recreational area. The seating should of course also work during the summer period as well as the winter period. By using a hard material, which is also used at the car parking, you hereby achieve a better link between the two functions, see ill. D13. Some of the seating is placed in connection with the pathway, which make them accessible during the winter period. But some of the seating is found away from the pathway inside the small pockets and should be used more during the summer period.

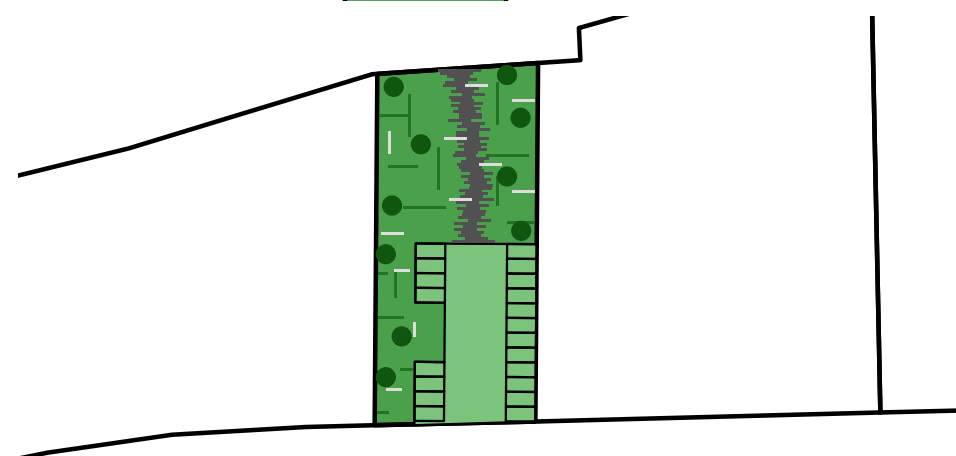
In order to make good sun and shade conditions and reduce the wind, vegetation must be added. In order to give the recreational area a more private character, so you are not exposed to the people in the surrounding buildings, the trees should be found to towards east and west, see ill. D14.



III. D12 Recreational pockets

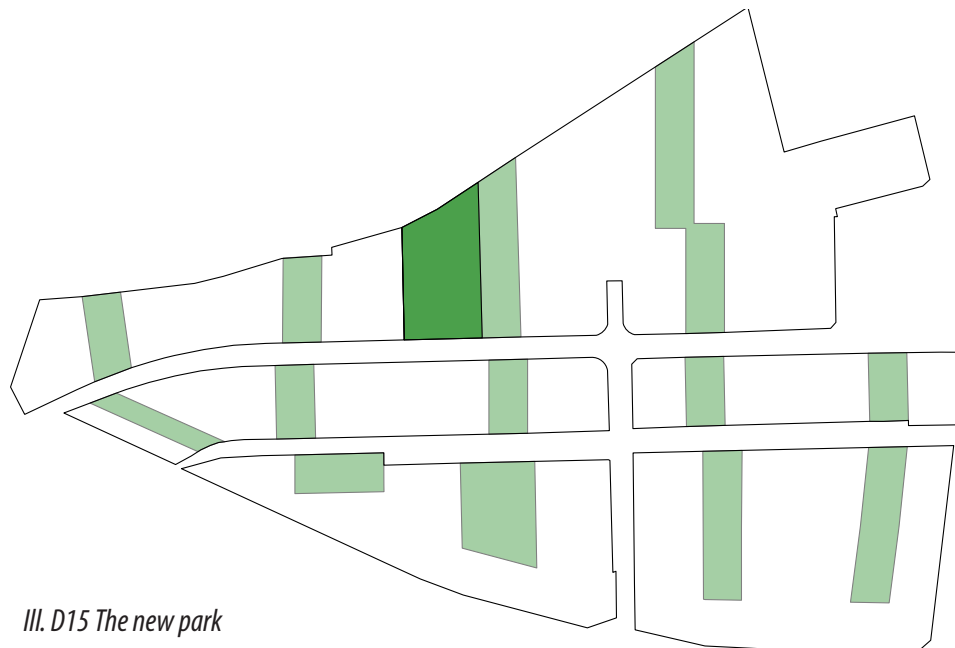


III. D13 Recreational seating and movement



III. D14 Placement of trees

In order to offer more than just recreational functions, a park should be located in the middle of the site. As the recreational areas does not compete with Godsbaneparken, the park should not compete with Godsbaneparken as well. Though the park should consist of activities and functions that the site do not already offer. The park is found in the northern part of the site, see ill. D15. In order to make the park appear as a part of the site, the park should use the same elements as the recreational areas. Furthermore it should have functions that invites for short or long stays, addressed to the users of the site. By placing the park next to Godsbaneparken, the site gets a better link to Godsbanen. But by using other elements than in Godsbaneparken, you see it is two separated areas.



III. D15 The new park

Since the main user of the park should be the people living in the area, the functions should primarily address to those. Functions that gives the possibility for stays and activities. Since you can expect families with children moving in to the residential buildings, a playground should be added. To make the playground more tempting, it should be different from a regular playground. The playground should challenge the children and improve their motor function and balance. Such a playground is found in New York, The Union Square Park, see ill. D16. The playground for an example consist of small rises, the children have problems climbing. But after trying for a while, they learn to climb it and in the end it is no longer that big a challenge.



III. D16, Union Square Park, North Plaza

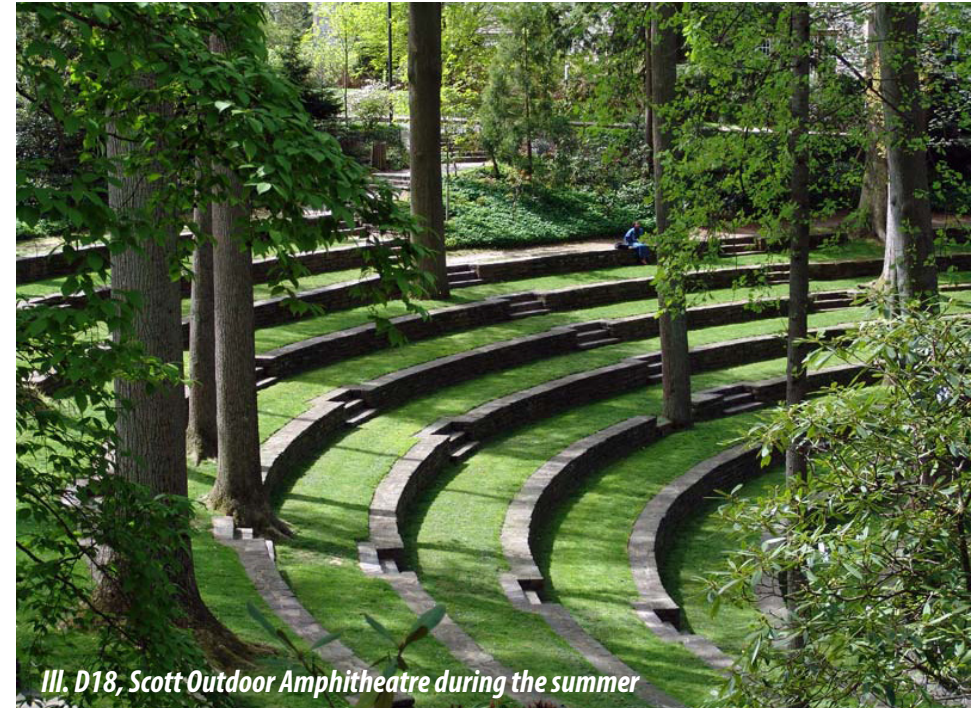
For the grown ups, some activities should be found as well. Since Godsbaneparken offers sport activities, the park should offer other activities. Around the world outdoor fitness is a huge success - also in Aalborg. The park should have outdoor fitness, where you can go and train whenever you feel like doing it, see ill. D17. The outdoor fitness is frequently used by people, primarily people in the age of 16 and above. Even elder people like senior citizens use the outdoor fitness.

With the playground and the outdoor training, a function for relaxation should be added. In order to create seating an amphitheatre is added. Since an amphitheatre at the site probably will not function that much as a theatre, it should work as a place for relaxation as well. In order to create the best outdoor conditions, trees should be added on the amphitheatre. By using different kind of trees, the area will have a colourful expression during the fall, see ill. D18 and D19. By not adding too many trees, you achieve both spaces with sun and shade. On a warm day you will look for the shade and on a cool day you will look for the sun, as mentioned in the chapter *City Space Design*.

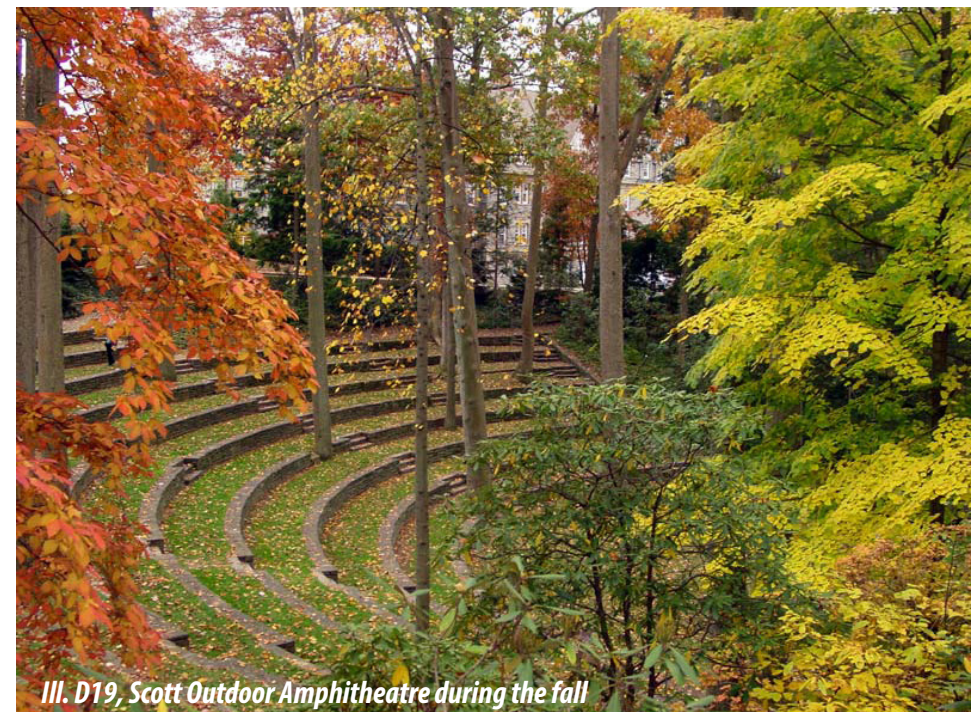
Furthermore a green space is found in between the function. A space where some small pockets are found like the pockets in the residential areas. Those pockets have a more exposed location and you will not get the same privacy here as you would, if you stayed in residential areas.



Ill. D17, An example of outdoor fitness in China



Ill. D18, Scott Outdoor Amphitheatre during the summer



Ill. D19, Scott Outdoor Amphitheatre during the fall

Placement of Functions

In order to find a safe location for the playground, it is placed away from the Hjulmagervej, in the north-western part of the park. In this area you can let your children play safely.

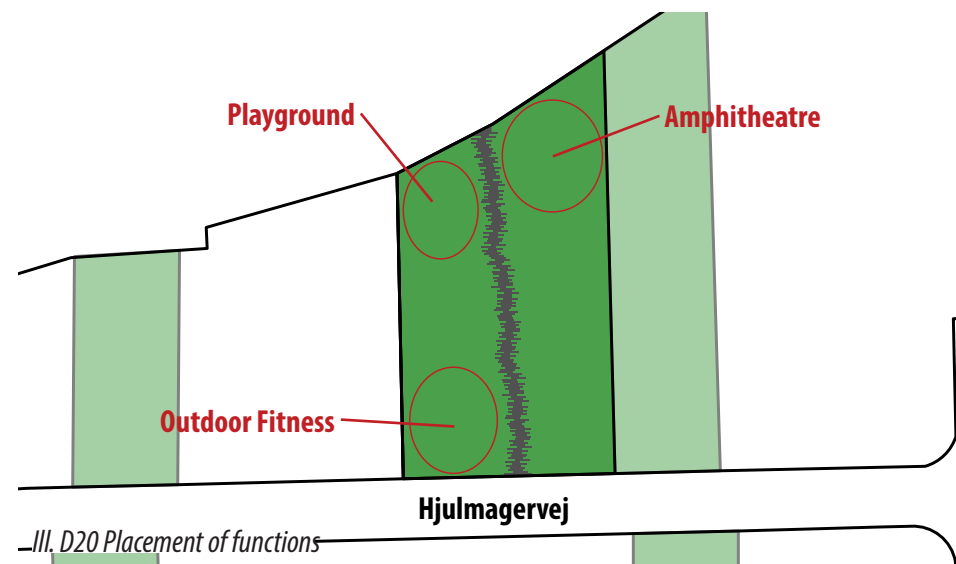
In the south-western part of the park, the outdoor fitness is found. The outdoor fitness does not have to have a safe and quiet surroundings, why it is found next to Hjulmagervej.

The amphitheatre is found in the north-eastern part of the park, next to the playground. From here it has a quiet placement away from the Hjulmagervej.

Around the functions, green open spaces are found. Those areas functions as at the recreational areas and has some small pockets for staying. Here you have a more exposed placement and may use it different than the pockets at the recreational areas.

In the northern part of the park, the playground and amphitheatre are found. This is the first thing you see, when you comes from Godsbaneparken. The outdoor fitness is found next to Hjulmagervej. From here the outdoor fitness attracts attention from the passing people.

As mentioned, the site should develop over a numbers of years. When it is finish, you will find a mix of residential, office and commercial functions and greenery. Those functions should melt together, see ill. D21.



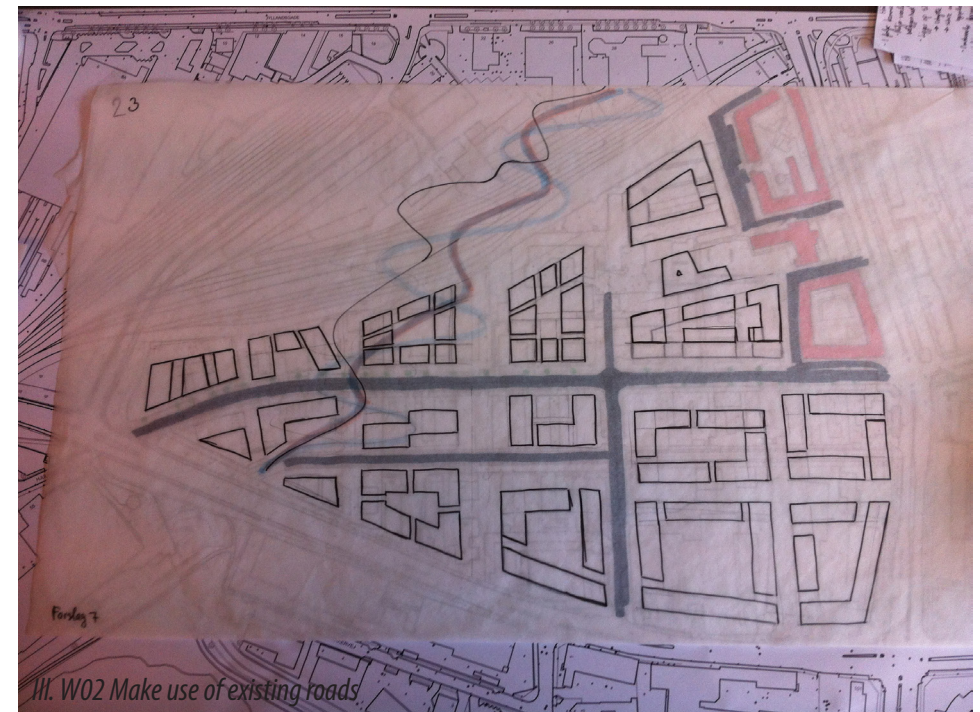




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SKETCHING

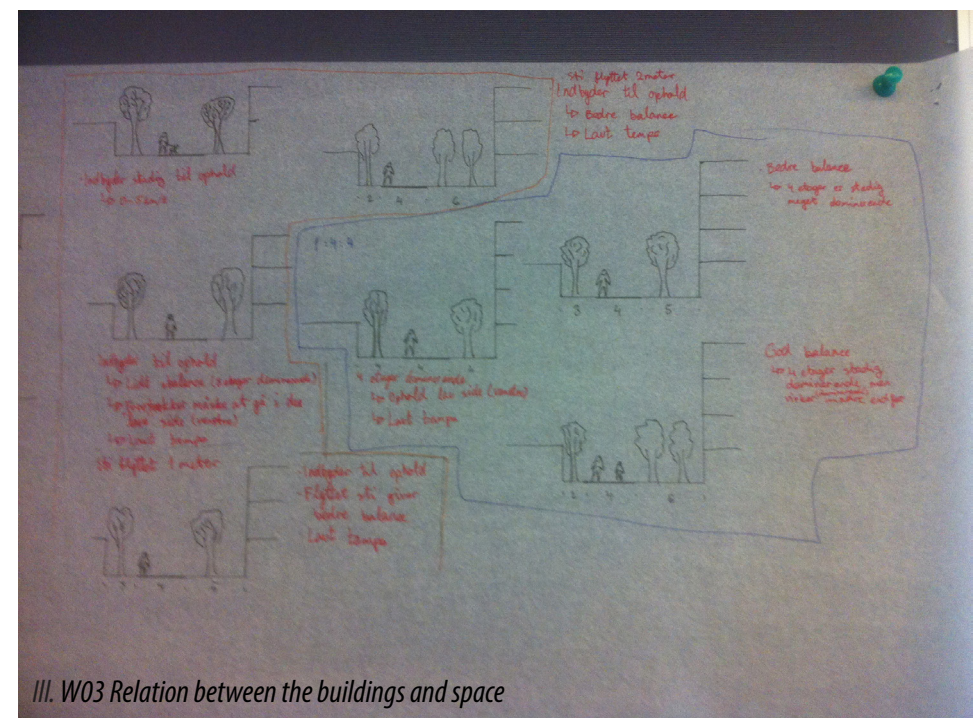
In the beginning I primarily used a lot of sketching and switched between plan, sketching, and 3D. This gave me a basic three-dimensional understanding of the relation between buildings and the spaces in between the buildings.



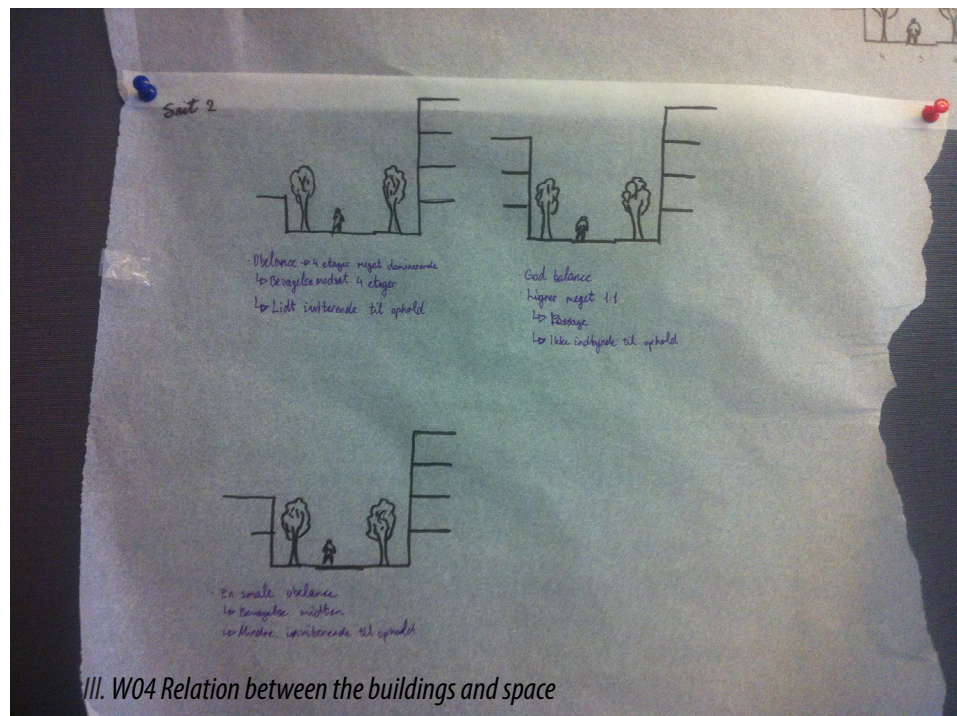
III. W02 Make use of existing roads



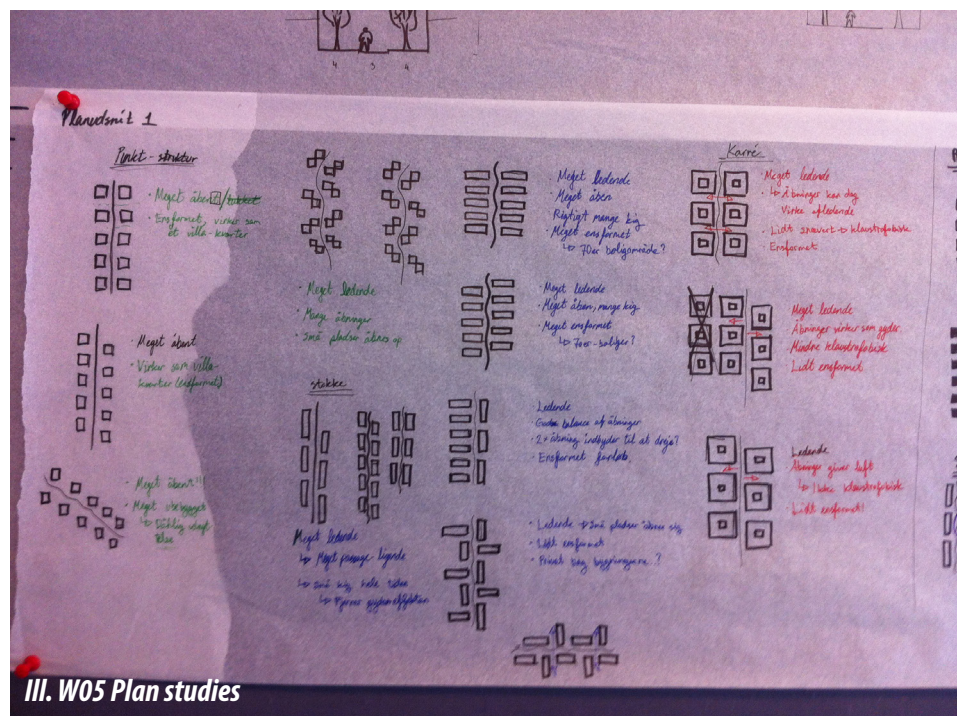
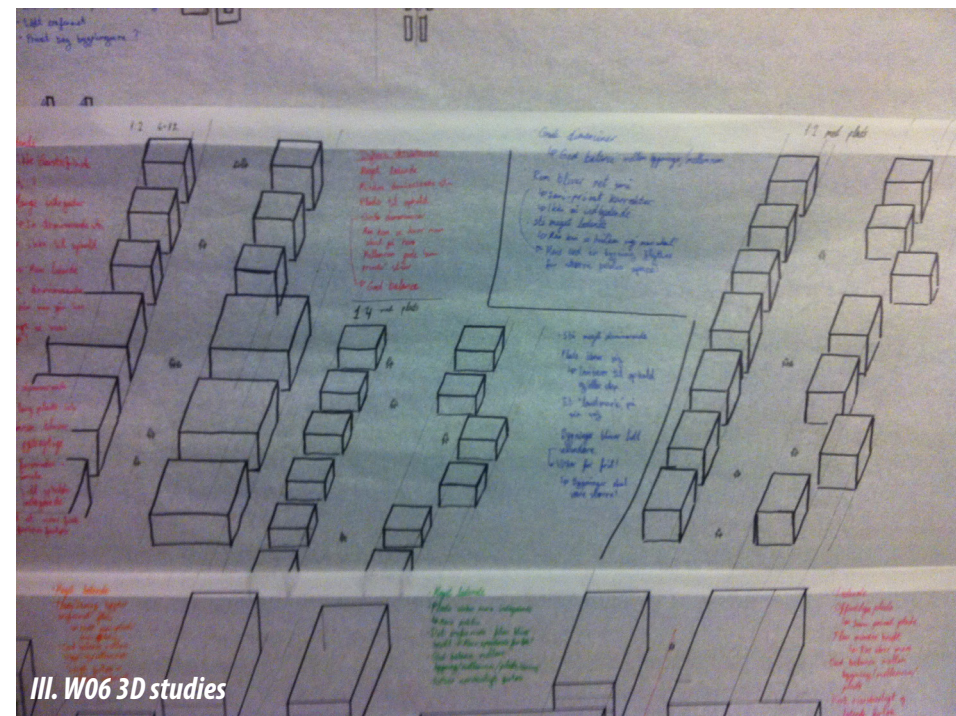
III. W01 The first sketch. No plot ratio, no heights, only a residential/office division.



III. W03 Relation between the buildings and space



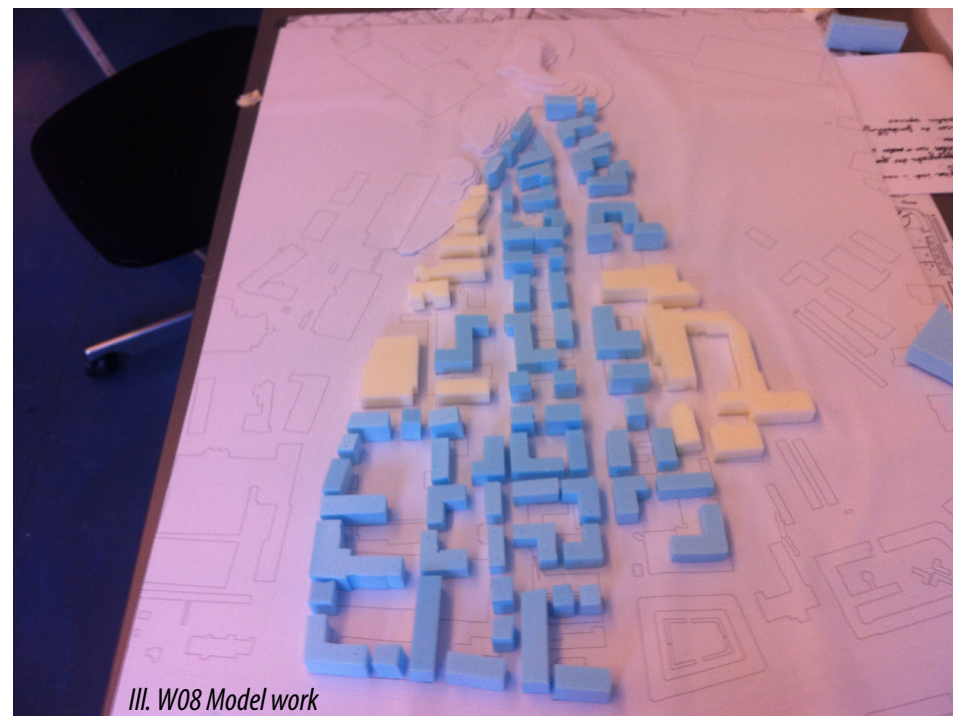
III. W04 Relation between the buildings and space



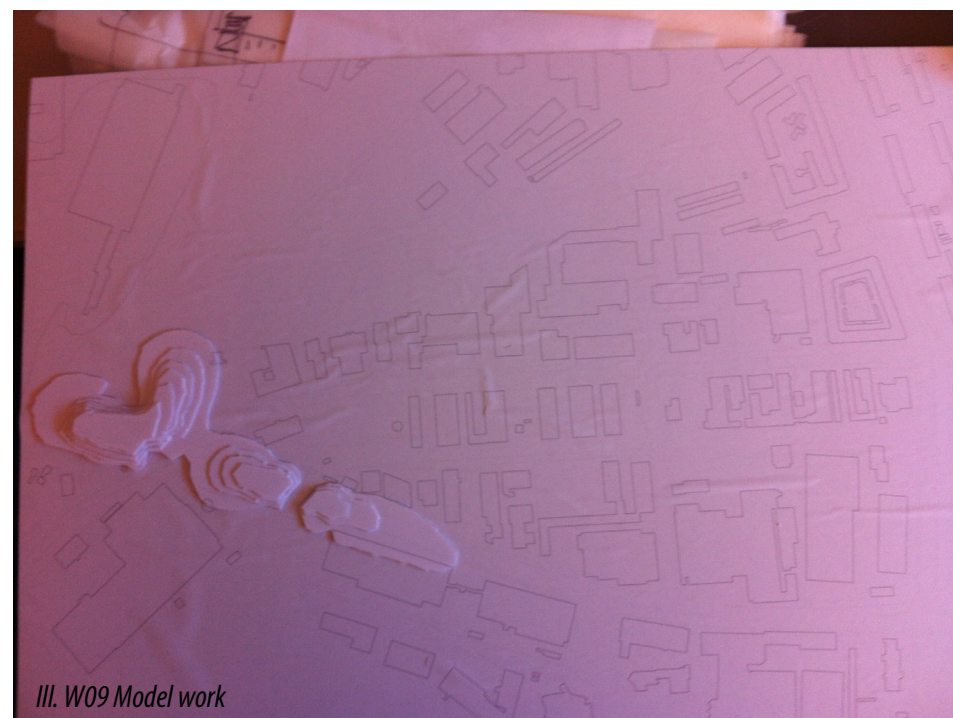
III. W05 Plan studies



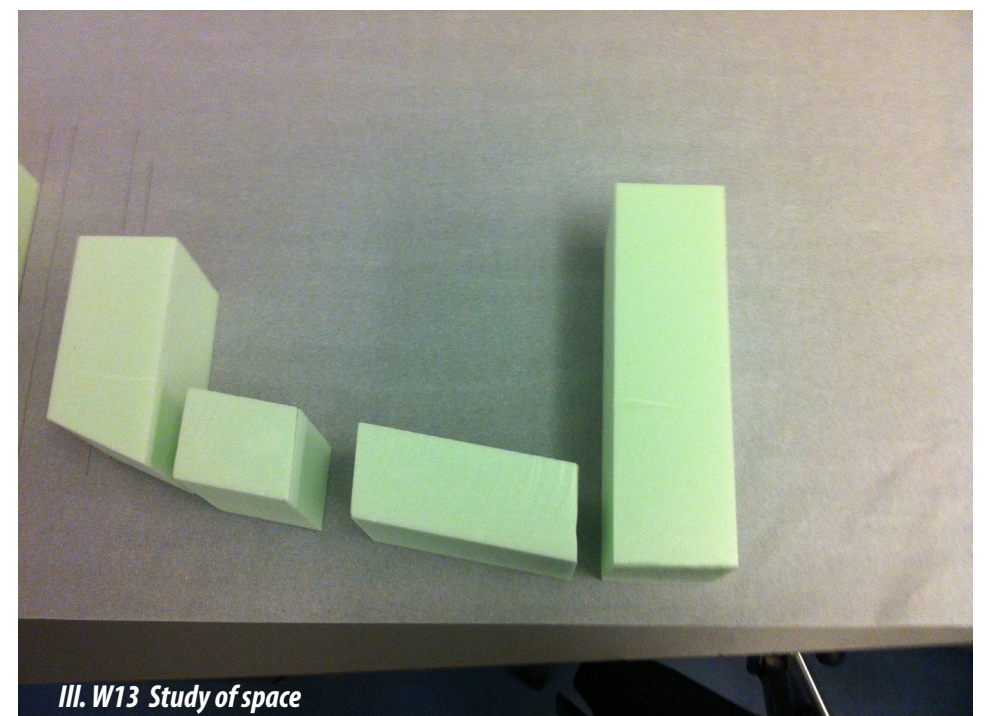
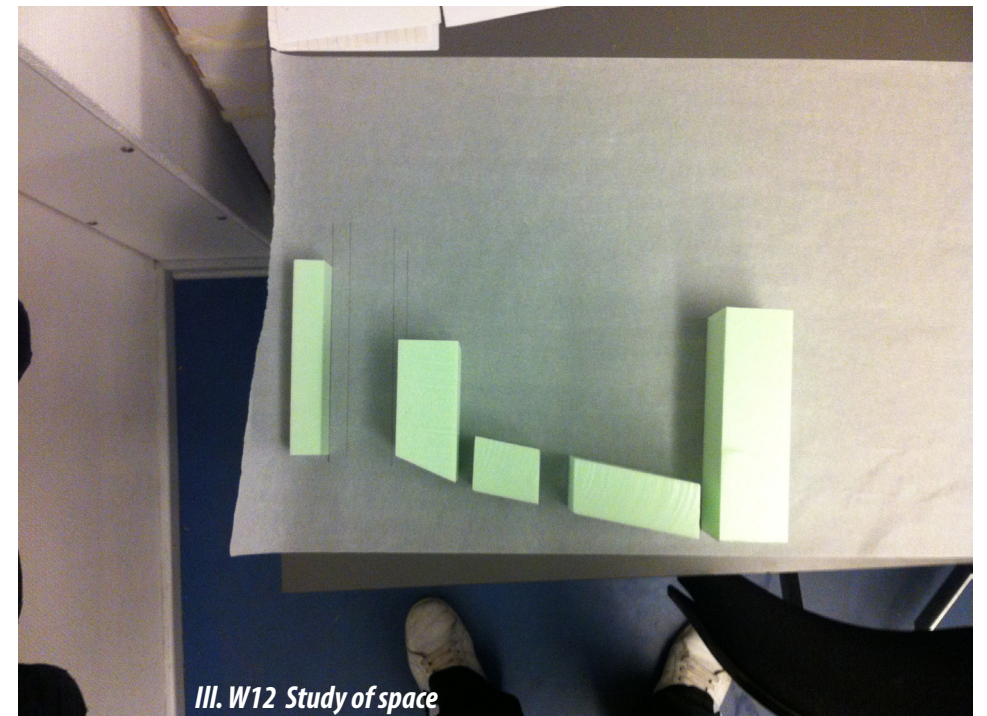
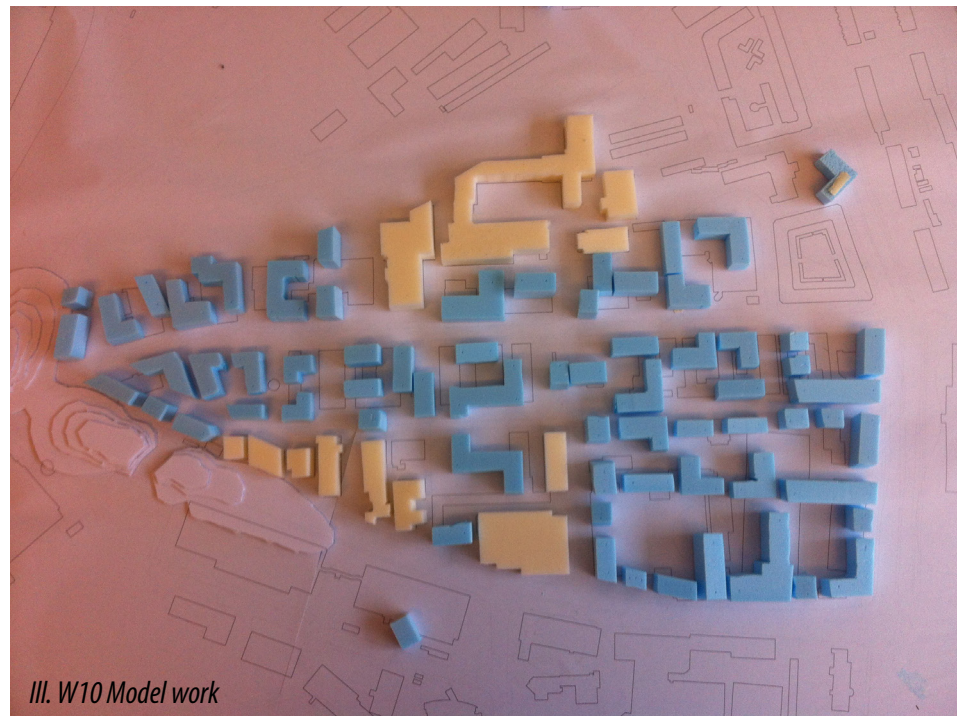
After doing a lot of sketching, I made a physical model. I did this in order to get a better three-dimensional understanding and got the opportunity to investigate the spaces between buildings in details.



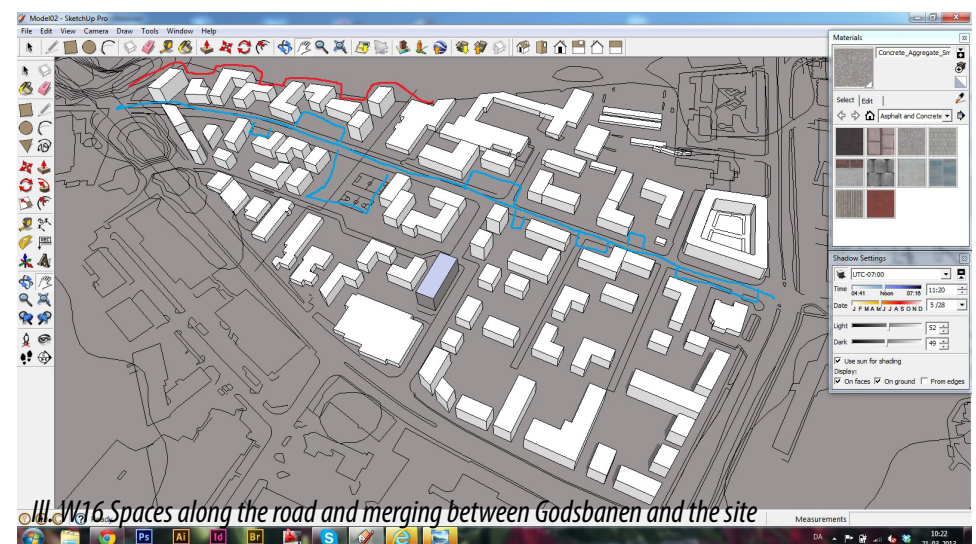
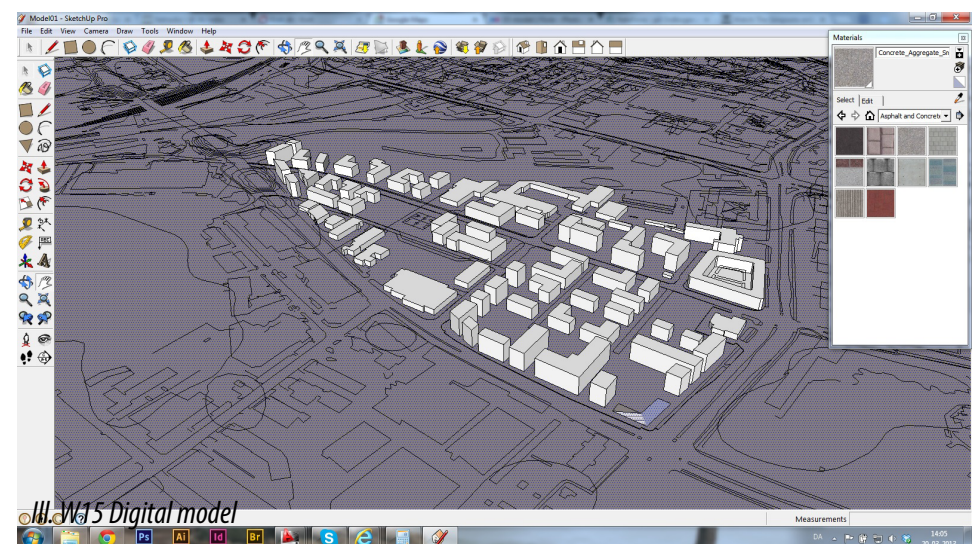
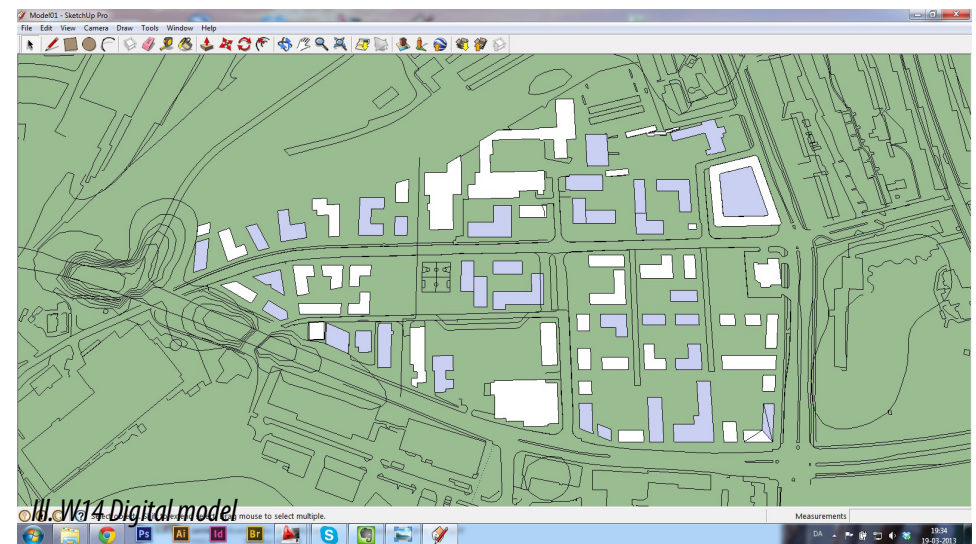
III. W08 Model work

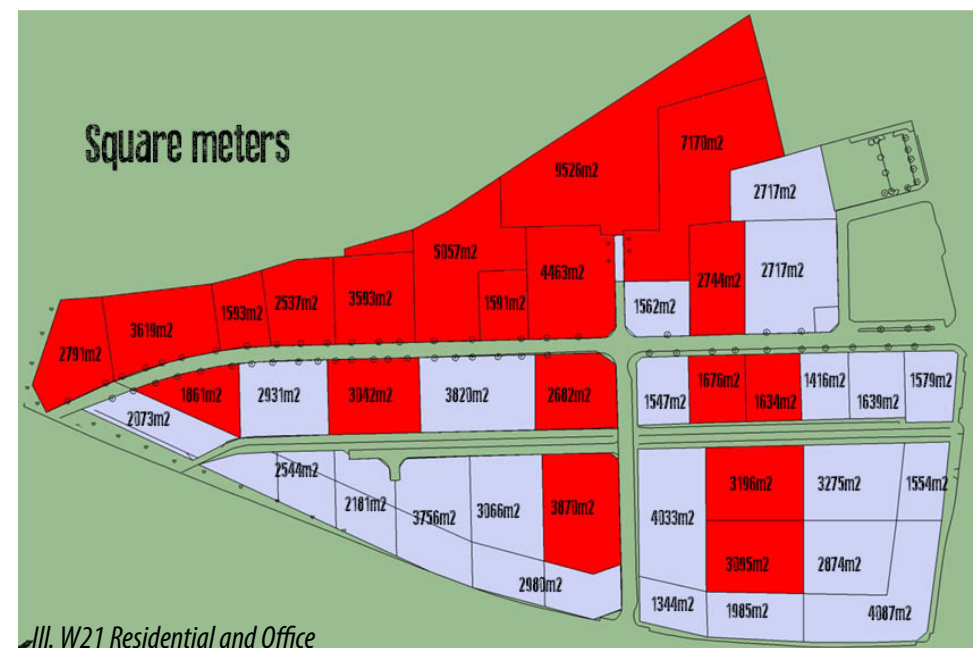
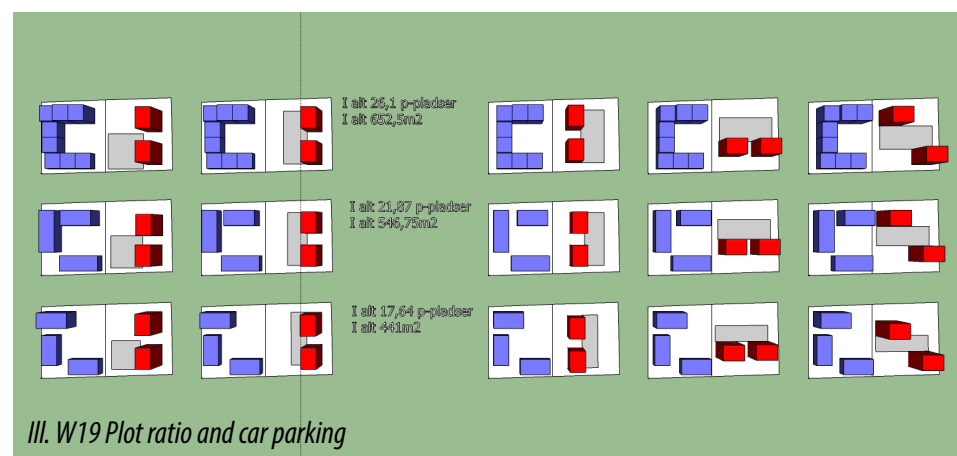
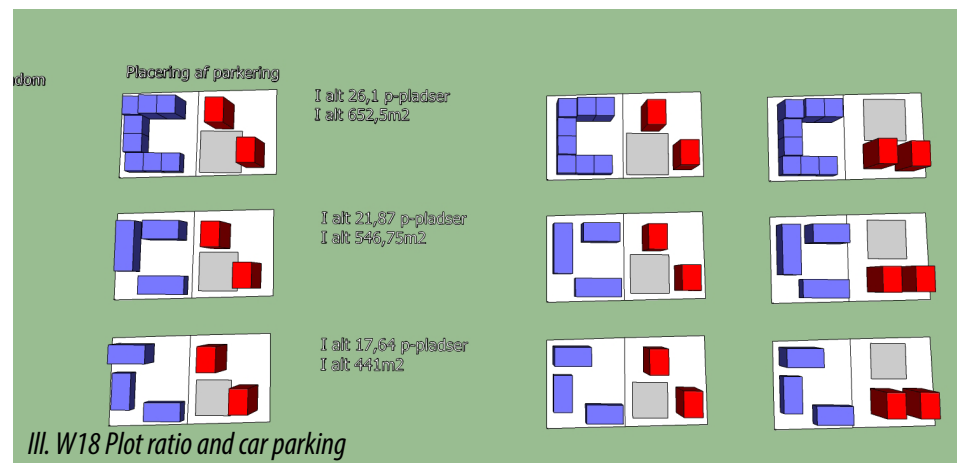
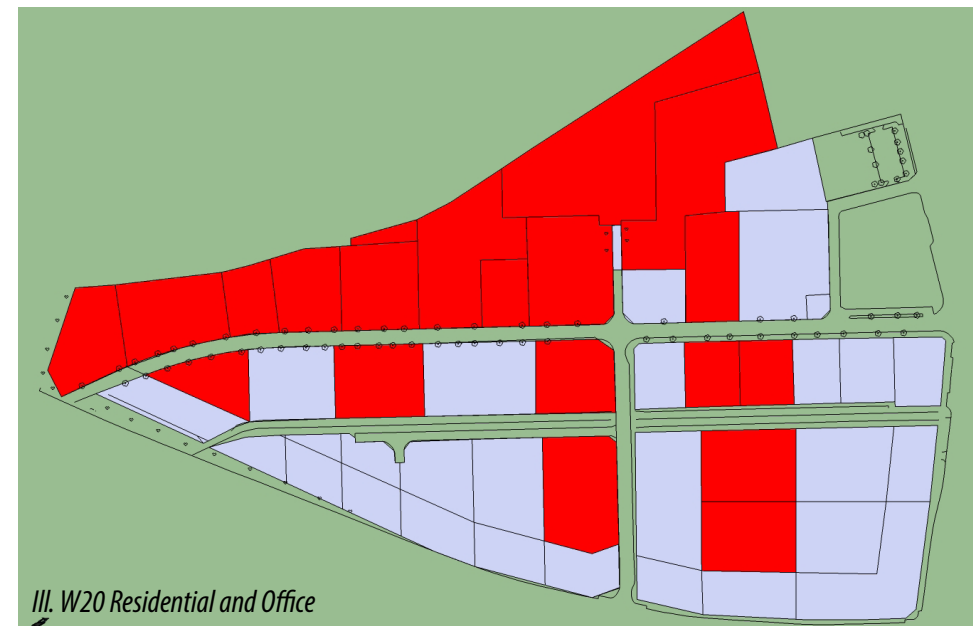
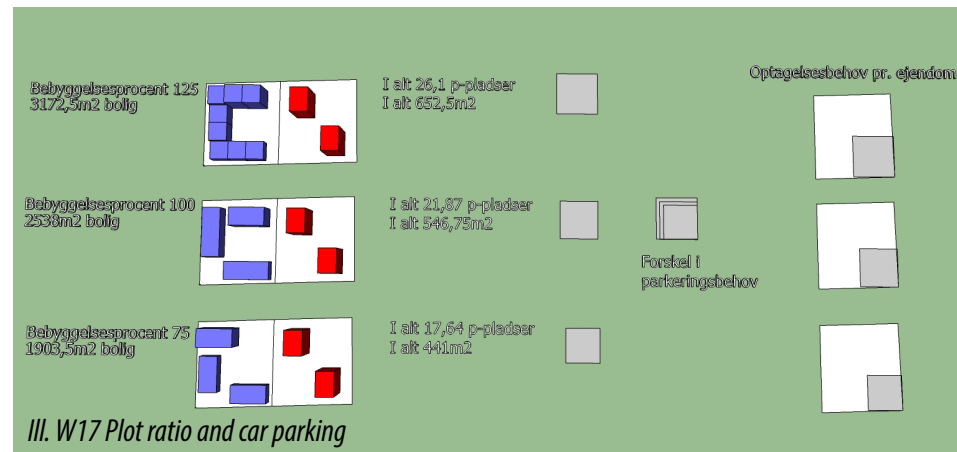


III. W09 Model work



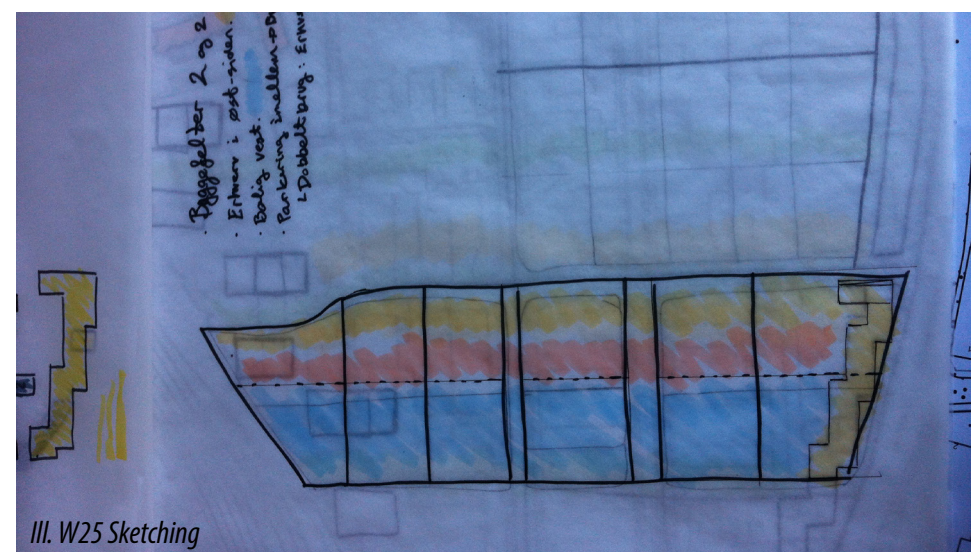
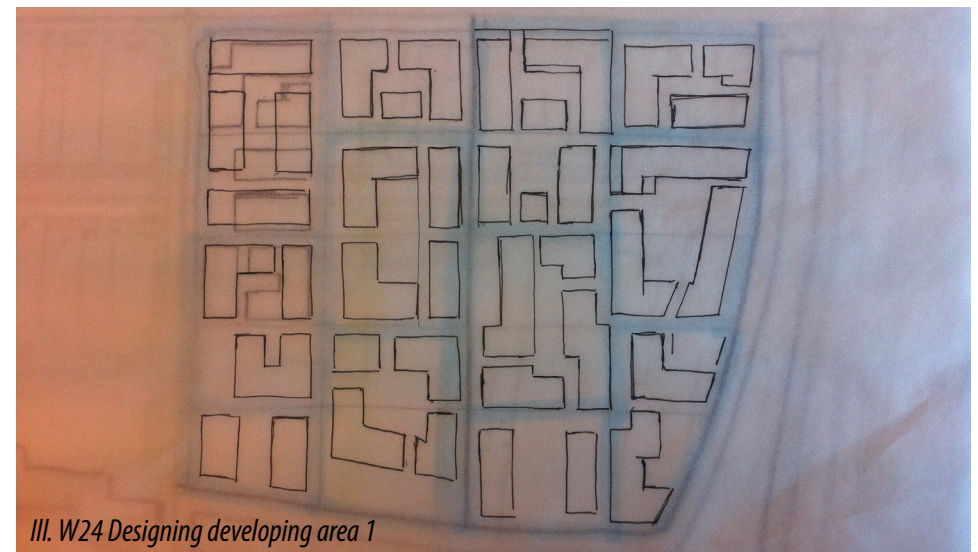
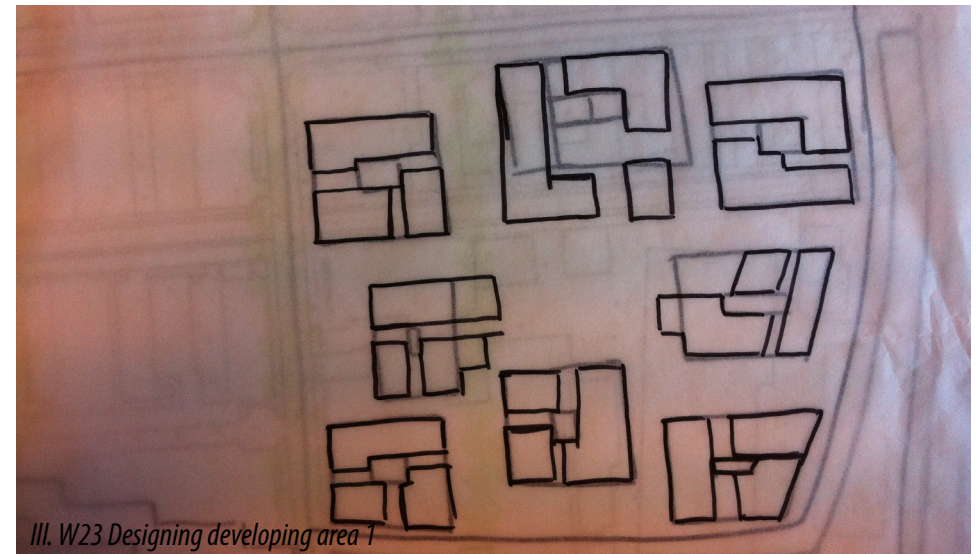
To try out a lot of different typologies, a digital 3D model was made. With the model it was easy to change typologies that does not work and try something else. The digital model worked fine to me, since I could try things out really fast and change it, if it did not work.

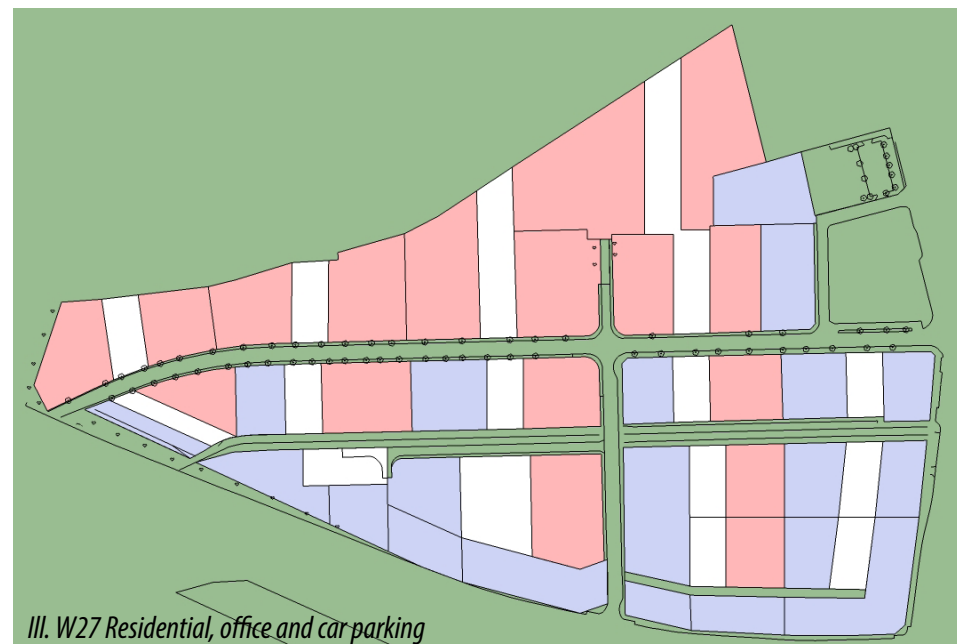
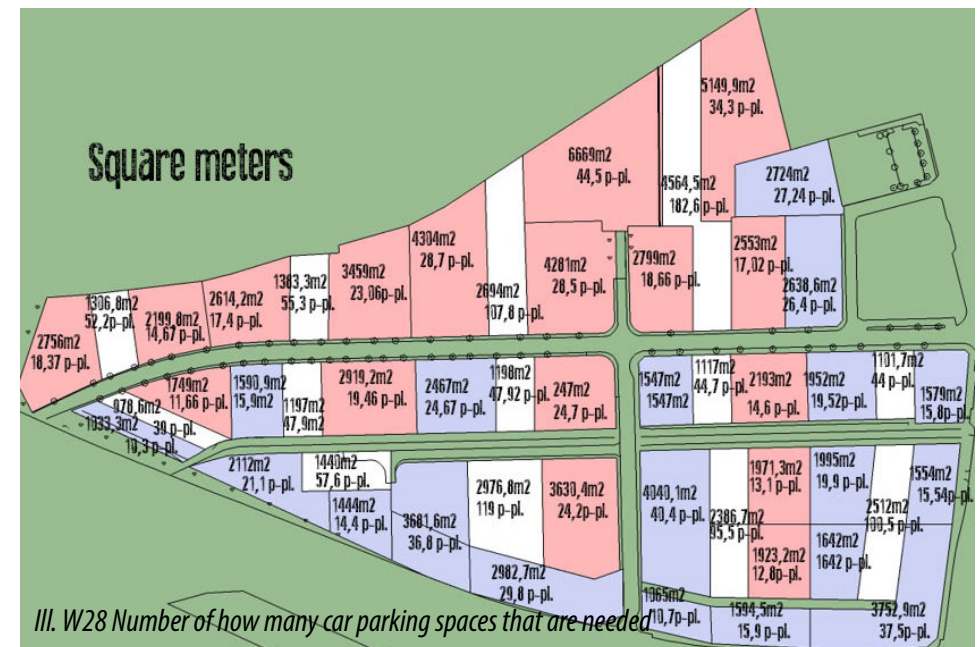
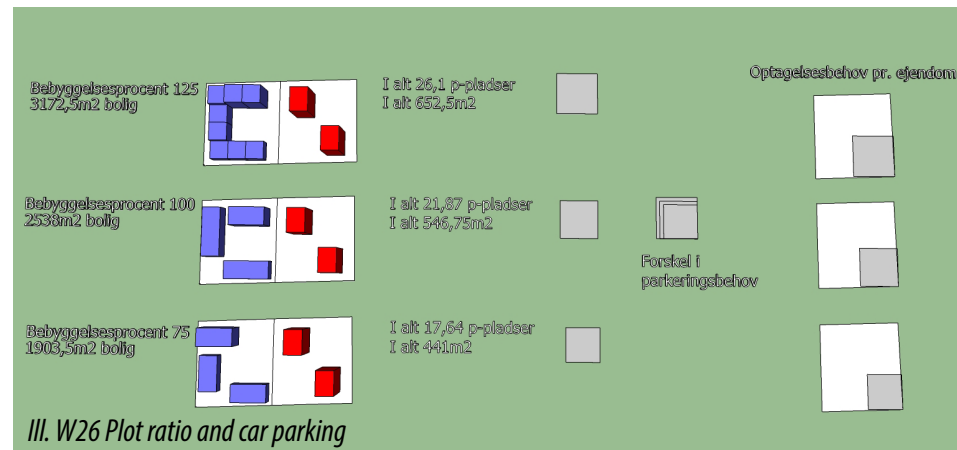




In order to work efficient, I switched between sketching, modelling and digital modelling. By hand I could do some fast sketches and see if it works or not. When I found something I thought might work, I could make a model of it pretty fast and see if it works three-dimensional as well.

To make the project move in the right direction, design guidelines and design parameters were found during the process. By finding design parameters and guidelines the project developed and ended up being what you see in the presentation.





10/10

REMARKS
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The Problem Statement says:

How can you do an urban gradual renewal of the site, so the functions fit into an inner city environment with attractive outdoor spaces for the users?

The first part of the problem statement says that the functions must fit into inner city environment. By this, the challenge was to design the urban gradual renewal, that changes the functions from being industrial to fit into an inner city environment. Furthermore it was a challenge to make the site fit into its surroundings, so it no longer appears as an isolated area in the city, but have a strong link to its surroundings. Along the new functions, outdoor spaces were designed, primarily intended for the user of the site.

The second part of the problem statement says, that there should be outdoor

spaces for the users. Using this method of design parameters aided in the process of working out a solution for the users of the site. The design parameters dictate how the buildings must be designed and form comfortable spaces for the users of the site. Spaces that both have a private or a public character, depending on the surrounding buildings.

By doing these changes, the problem statement is addressed and resolved. The site has gotten a new identity and have stronger ties to its surroundings, and outdoor recreational areas. With these changes, the area has been transformed from what appears to be an industrial island in the city to a contextual area with inner city functions. The outdoor spaces has been considered carefully in order to suit the users.

The project started by gathering informations about the site. I went there to observe at the site and I researched written materials with which the municipality of Aalborg were helpful to supply with needed information. At the same time I started to do the first designs, to understand and get to know the site. The first analysis was done in parallel with the first sketches which was a way of working that I am not used to. By doing this I got a much better understanding of the site and I learned the qualities of the site much faster.

This project is proposed with the aim of being a realistic proposal. The project should consist of aspects, that should sound sensible to the municipality of Aalborg. However, this realistic point of view have an impact on the whole project. The project does not make a new landmark in Aalborg or for Aalborg, but takes it starting point in the context. Even though the project has a realistic approach, it may not be implemented. Besides being an assignment the project is not finished and could be optimized on many levels.

By taking a look at the new harbour front, which is also done in stages, some interesting designs appears. Along the harbour front, are buildings like Utzon Centeret, and within a short period the new music house and new student houses will be finished. Iconic buildings that attracts attention and are supposed to brand Aalborg. Taking a look at these, I could have used them as inspiration, but by doing that, the site would have other functions and would have appeared completely different than what this project offers.

Though the harbour is another context, closer to the city centre, and has an exposed location, which is a focus area for the municipality and they may be willing

to spend more resources there that they would in a project at the edge of the city centre.

A personal decisive factor in this project was, that I did the project individually. This is the first time I did a semester project on my own and I learned out it was more far challenging than expected - in almost all aspects. Furthermore I found my weaknesses, which may have slowed down the process a lot.

One of the most challenging aspects turned out to make decisions. It might sound basic, however I found out that choosing what direction to go and stick with it takes courage. I am used to do cooperative work and discuss almost every thing before a decision is made. When I did this myself, I figured out it is harder to make a decision than I expected. By discussing it with other qualified people, I found that it is easier to expose all the advantages and disadvantages and thereby reach a decision based on those findings. On my own I had too many possibilities which often gave me a hard time reaching a decision.

Another aspect I found out was the absence of a discussion partner. In the beginning I thought I could do a lot of the ideas and make a lot of decisions on my own. After discussing it with another person who did not know my project that well, I figured out how much a discussion partner means in a project like this. When you get a good idea, or at least an idea that you think is good yourself, you should go and discuss it with somebody, to get another person's point of view. Comments from outside may be worth gold, since the opponent person has another perspective and can offer insights and conclusion that I would not have reached by myself.



REFERENCES



Boye, A. .M.; Indenrigs- og Socialministeriet ; Aalborg Kommune ; Metopos By- og Landskabsdesign. 2009. *Mental byomdannelse : midlertidig anvendelse som kick starter for en omdannelsesproces*

Barnett, J. 2003. *Redesigning cities : Principles, Practice, limplementation*, Planners Press

Gehl, J. 2010. *Byer for mennesker*. Island Press

Link 1 <http://aakwww.aalborgkommune.dk/Kommuneplan/Kommuneplanrammer/Midtbyen/Aalborg+Midtby/default.htm>

Link 2 <http://www.aalborgkommune.dk/Kommuneplan/Bilag/Bilag+F0.htm>

PDF 1 Godsbanearealet i Aalborg by NIRAS

PDF 2 Eterniffen_info by Aalborg Kommune

Cover	Own illustration & http://upload.wikimedia.org/wikipedia/commons/2/2f/Jurong_Industrial_Estate_aerial_view.jpg
III. 01-04	Own illustration

Presentation

III. P01-P06	Own illustration
III. P07	http://www.publicdomainpictures.net/pictures/20000/nahled/autumn-trees-13053203313qK.jpg
III. P08	http://www.lyskultur.no/images/ill/AalborgHavnefront_020leMikaelSorensen.jpg
III. P09	http://images.travelpod.com/tripwow/photos/ta-00b3-74e8-b19e/open-paving-in-parking-lot-piancavallo-italy+1152_12896221259-tpfil02aw-28882.jpg
III. P10	http://www.landezine.com/index.php/2013/04/the-australian-garden-by-taylor-cullity-lethlean-and-paul-thompson/the-australian-garden-by-taylor-cullity-lethlean-and-paul-thompson-01/

Analysis

III. A01-A07	Own illustration
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Concept

III. C01-C08	Own illustration
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Studies

III. S01-S19	Own illustration
III. S20	http://www.dmi.dk/dmi/saadan_blaeser_det_i_danmark

Design Aspects

III. D01-D15	Own illustration
III. D16	http://1.bp.blogspot.com/_4ip45fBCljk/S_q6SVAr_xl/AAAAAAAAAR8/rxVxcRPY0ds/s1600/IMG_8578.JPG
III. D17	http://image.made-in-china.com/6f3j00PvjtgprRomEzY/Aoyu-Series-Installation-Project.jpg
III. D18	http://www.scottarboretum.org/gardentour/amphitheater/01-big.jpg
III. D19	http://www.scottarboretum.org/gardentour/amphitheater/02-big.jpg
III. D20-D21	Own illustration

Working Process

W01-W29	
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